

**DL11
asynchronous
line interface
engineering drawings**

digital equipment corporation · maynard, massachusetts



**EQUIPMENT
CORPORATION**

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

SEQUENCE

DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M78ØØ-YA-1
CABLE ASSEMBLY (KL8/E)	D-IA-7008360-Ø-Ø
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

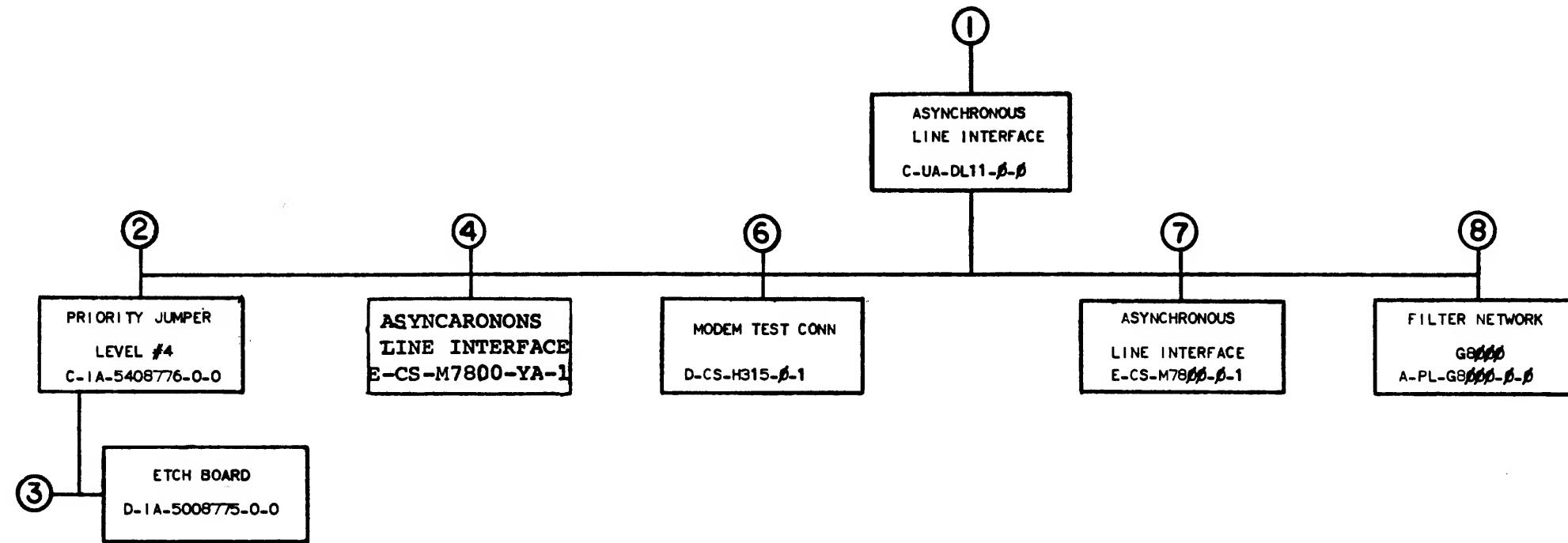
PRINT SET #3

DRAWING DIRECTORY	B-DD-DL11-0
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-0-0
ASYNCHRONOUS LINE INTERFACE	(PL) A-PL-DL11-0-
ASYNCHRONOUS LINE INTERFACE	E-CS-M7800-0-1
CABLE, MODEM BC05C	D-UA-BC05C-0-0
CABLE ASSEMBLY (KL81E)	D-IA-7008360-0-0
MODEM TEST CONN.	D-CS-H315-0-1
INSTALLATION PROCEDURE	A-SP-DL11-0-2

PRINT SET #2

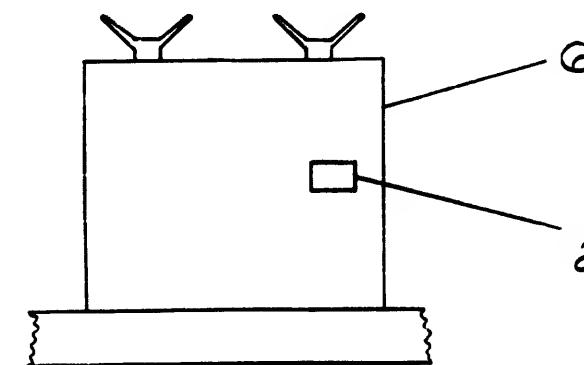
DRAWING DIRECTORY	B-DD-DL11-Ø
ASYNCHRONOUS LINE INTERFACE	C-UA-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE (PL)	A-PL-DL11-Ø-Ø
ASYNCHRONOUS LINE INTERFACE	E-CS-M780Ø-Ø-1
CABLE, MODEM BCØ5C	D-UA-BCØ5C-Ø-Ø
FILTER NETWORK	B-CS-G8ØØ-Ø-1
MODEM TEST CONN	D-CS-H315-Ø-1
SOFTWARE LIST	A-SL-DL11-Ø-4
ACCESSORY LIST	A-AL-DL11-Ø-5
INSTALLATION PROCEDURE	A-SP-DL11-Ø-2

THIS IS PRINT SET



TITLE	SIZE	CODE	NUMBER	REV
ASYNCHRONOUS LINE INTERFACE	SHEET 2 OF 3	B DD	DLII - Ø	L

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NOTES:

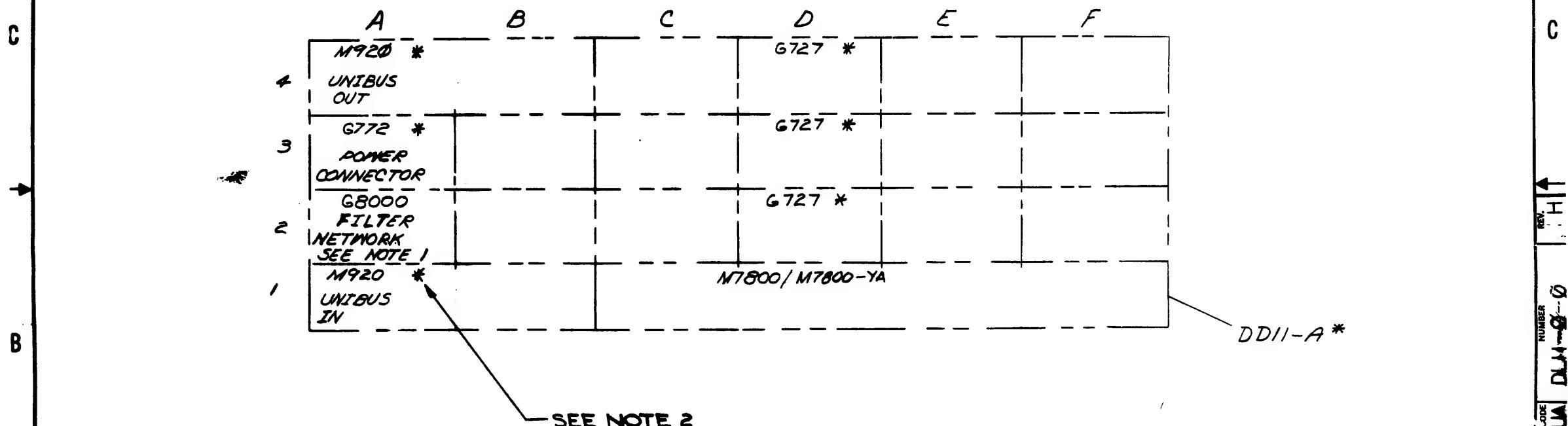
1. G 8000 IS REQUIRED ONLY IN PDP 11 SYSTEMS WHERE +15V IS NOT AVAILABLE. THE INSTALLATION REQUIRES 2 WIRES TO BE ADDED.

A03Y2-A02V2

A02N2-CXXUI

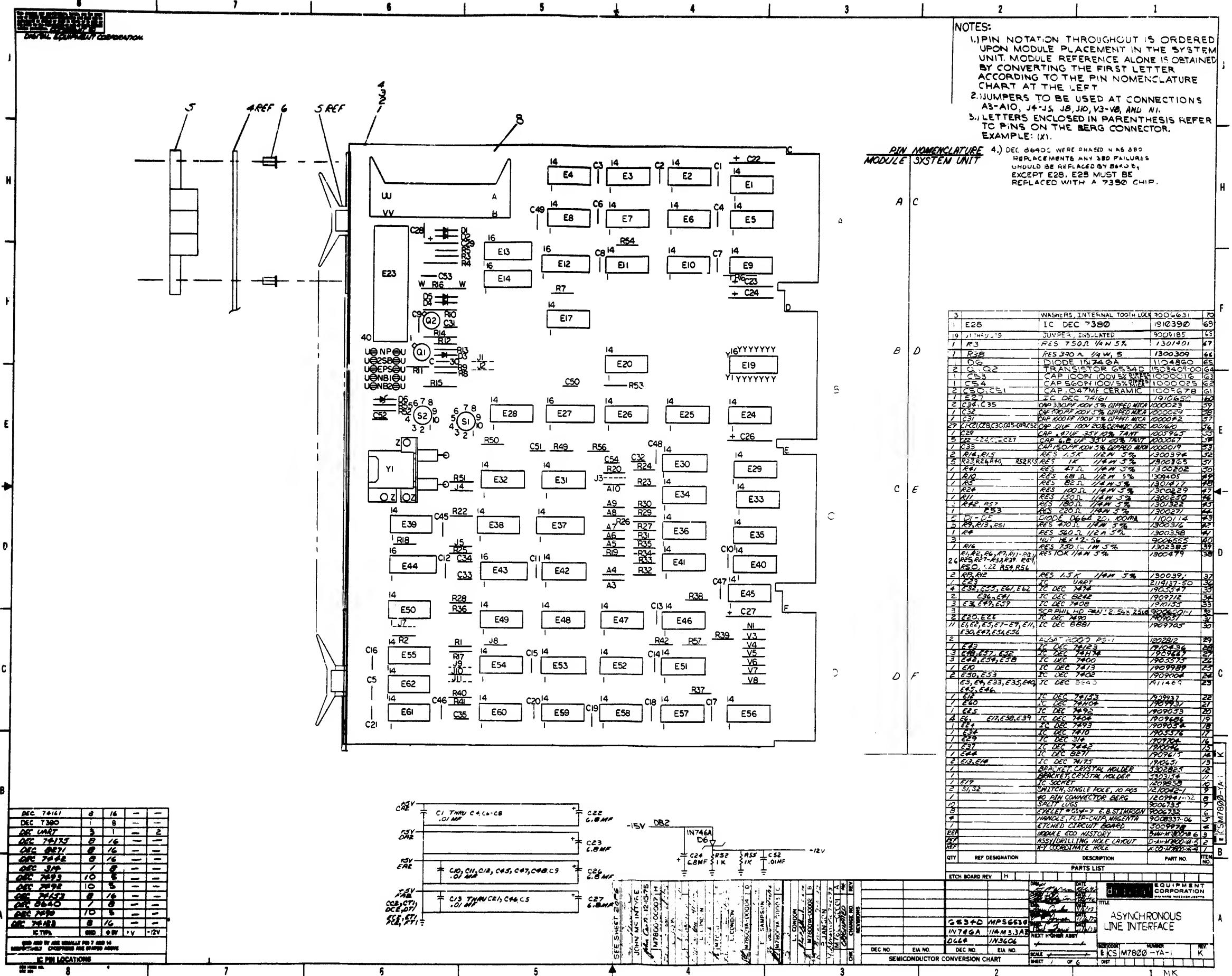
WHERE (XX) IS THE SLOT NUMBER CONTAINING THE DL11.

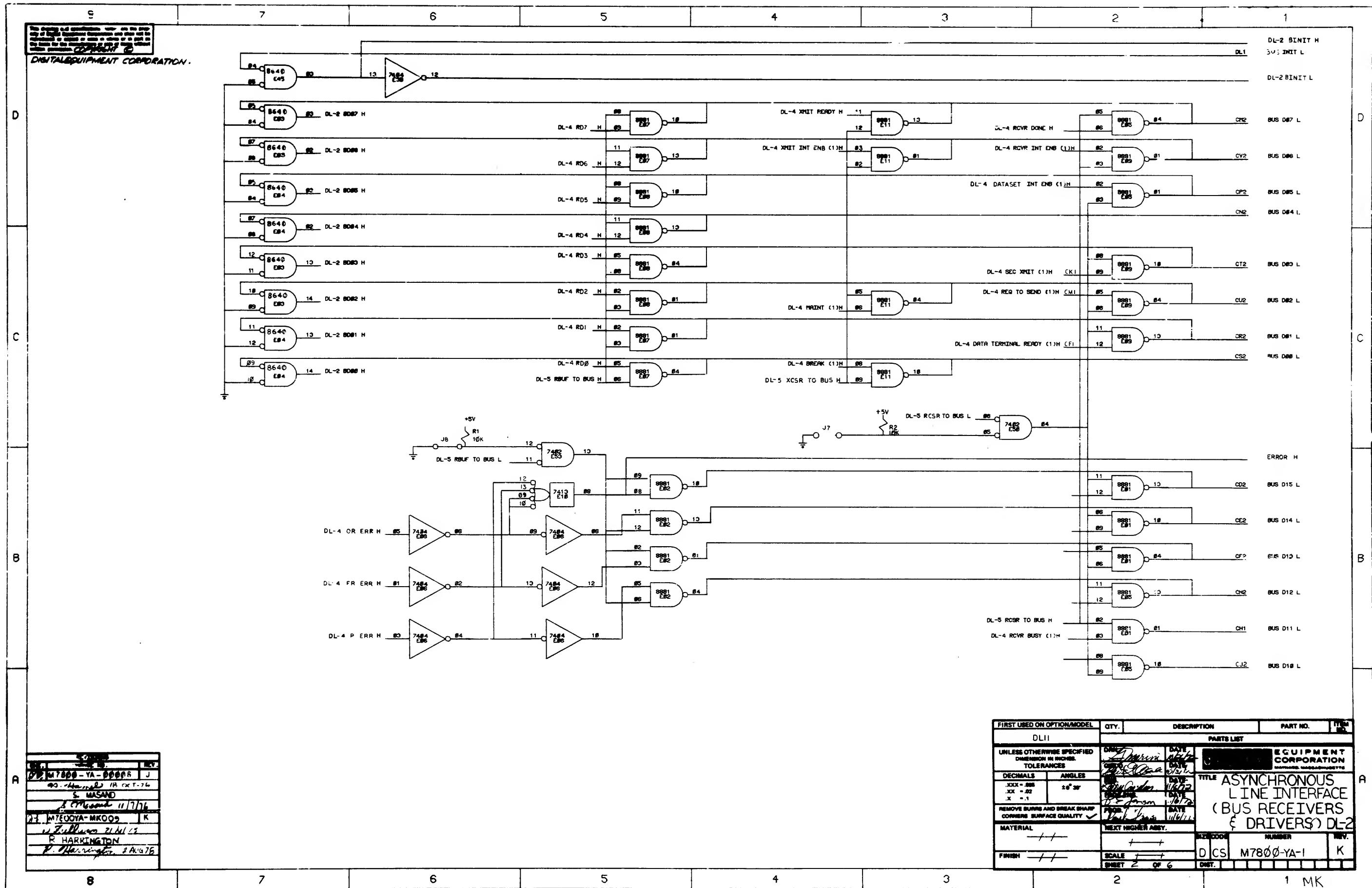
2. ITEMS INDICATED WITH ASTERISK (*) ARE SHOWN FOR REFERENCE ONLY AND ARE NOT PART OF THIS UNIT.



REV/REQ			CHANGE NO.			REV.		
CHK	DL11-00001	A	CHK	DL11-00005	C	CHK	DL11-00008	E
P-20	2/11-72		P-20	2/11-72		P-20	2/11-72	
R-JANSON			R-JANSON			R-JANSON		
22	2/11-00002	B	22	2/11-00006	D	22	2/11-00009	F
22	2/11-00003	C	22	2/11-00007	E	22	2/11-00010	H
22	2/11-00004		22	2/11-00005		22	2/11-00008	
22	2/11-00006		22	2/11-00008		22	2/11-00010	
22	2/11-00007		22	2/11-00009		22	2/11-00010	
22	2/11-00008		22	2/11-00010		22	2/11-00010	
22	2/11-00009		22	2/11-00010		22	2/11-00010	
22	2/11-00010		22	2/11-00010		22	2/11-00010	
22	2/11-00011		22	2/11-00011		22	2/11-00011	
22	2/11-00012		22	2/11-00012		22	2/11-00012	
22	2/11-00013		22	2/11-00013		22	2/11-00013	
22	2/11-00014		22	2/11-00014		22	2/11-00014	
22	2/11-00015		22	2/11-00015		22	2/11-00015	
22	2/11-00016		22	2/11-00016		22	2/11-00016	
22	2/11-00017		22	2/11-00017		22	2/11-00017	
22	2/11-00018		22	2/11-00018		22	2/11-00018	
22	2/11-00019		22	2/11-00019		22	2/11-00019	
22	2/11-00020		22	2/11-00020		22	2/11-00020	
22	2/11-00021		22	2/11-00021		22	2/11-00021	
22	2/11-00022		22	2/11-00022		22	2/11-00022	
22	2/11-00023		22	2/11-00023		22	2/11-00023	
22	2/11-00024		22	2/11-00024		22	2/11-00024	
22	2/11-00025		22	2/11-00025		22	2/11-00025	
22	2/11-00026		22	2/11-00026		22	2/11-00026	
22	2/11-00027		22	2/11-00027		22	2/11-00027	
22	2/11-00028		22	2/11-00028		22	2/11-00028	
22	2/11-00029		22	2/11-00029		22	2/11-00029	
22	2/11-00030		22	2/11-00030		22	2/11-00030	
22	2/11-00031		22	2/11-00031		22	2/11-00031	
22	2/11-00032		22	2/11-00032		22	2/11-00032	
22	2/11-00033		22	2/11-00033		22	2/11-00033	
22	2/11-00034		22	2/11-00034		22	2/11-00034	
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22	2/11-00081		22	2/11-00081		22	2/11-00081	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST			QUANTITY/VARIATION					
MADE BY M. PIERCE DATE 4/27/72	CHECKED J. FERGUSON DATE 4/27/72	SECTION 1	DL11-A	DL11-B	DL11-C	DL11-D	DL11-E	
ENG P. E. JANSON DATE 5/11/72	PROD <i>J. McElroy</i> DATE 5/15/72	ISSUED SECT. 1						
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	1	1	1	1	1	
1	C-IA-5408776-0-0	PRIORITY JUMPER LEVEL #4	1	1	1	1	1	
3	D-UA-BC05C-25	CABLE MODEM BC05C	-	1	-	1	1	
4	D-IA-7008360-0-0	CABLE ASSEMBLY (KL8E)	1	-	1	-	-	
5	D-CS-M315-0-1	MODEM TEST CONNECTOR					A/R See Note 2	
6	E-CS-M7800-0-1	ASYNCHRONOUS LINE INTERFACE	-	1	-	1	1	
7	A-PL-G3110-0-0	FILTER NETWORK	-	A/R	A/R	A/R	See Note 2	
8		CRYSTAL	A/R	RA	RA	RA	RA/R See Note 3	
9	E-CS-M7800-YA-1	ASYNCHRONOUS LINE INTERFACE	1	-	1	-	-	
10	9008269	TRANSPARENT VINYL TAPE	A/R					
NOTES:								
1. G8000 IS REQUIRED ONLY IN PDP11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A								
2. ONE M315 PER PDP11 SYSTEM								
3. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE OR BY THE DOCUMENTATION OF AN OPTION WHICH USES THE DL11.								
4. APPLY TAPE TO TOP SURFACES OF CRYSTAL AND MOUNTING BRACKETS TO INSULATE FROM ADJACENT MODULES.								
5. PRIORITY LEVELS 5, 6, or 7 MAY BE SPECIFIED BY THE CUSTOMER OR THE DOCUMENTATION OF AN OPTION WHICH USES THE DL11.								
TITLE ASYNCHRONOUS LINE INTERFACE		ASSY NO. C-UA-DL11-0-0	SIZE A	CODE PL	NUMBER DL11-0-0		REV. A	ECO NO. DL11- 00010
		SHEET 1 OF 1	DIST.					





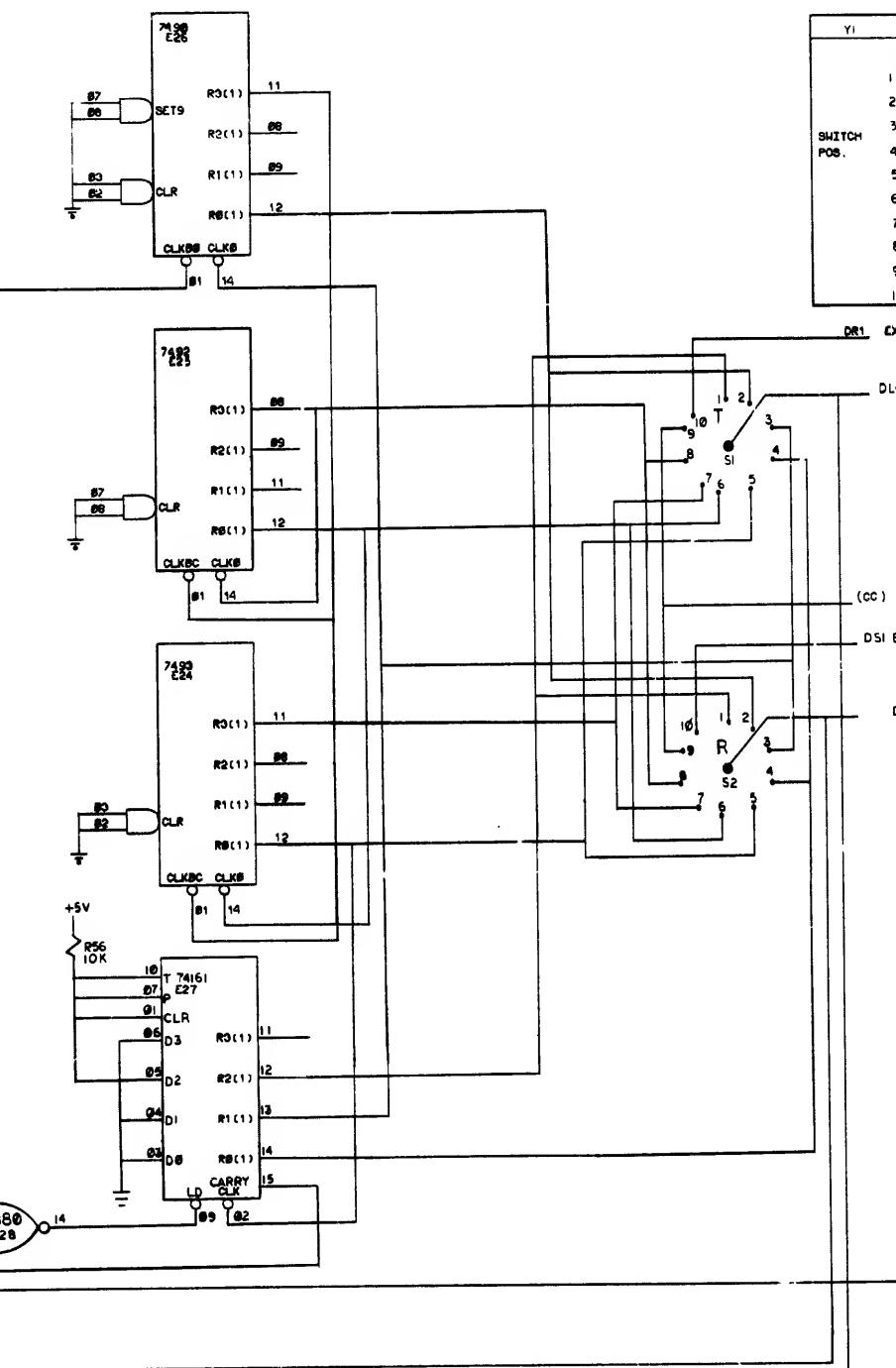
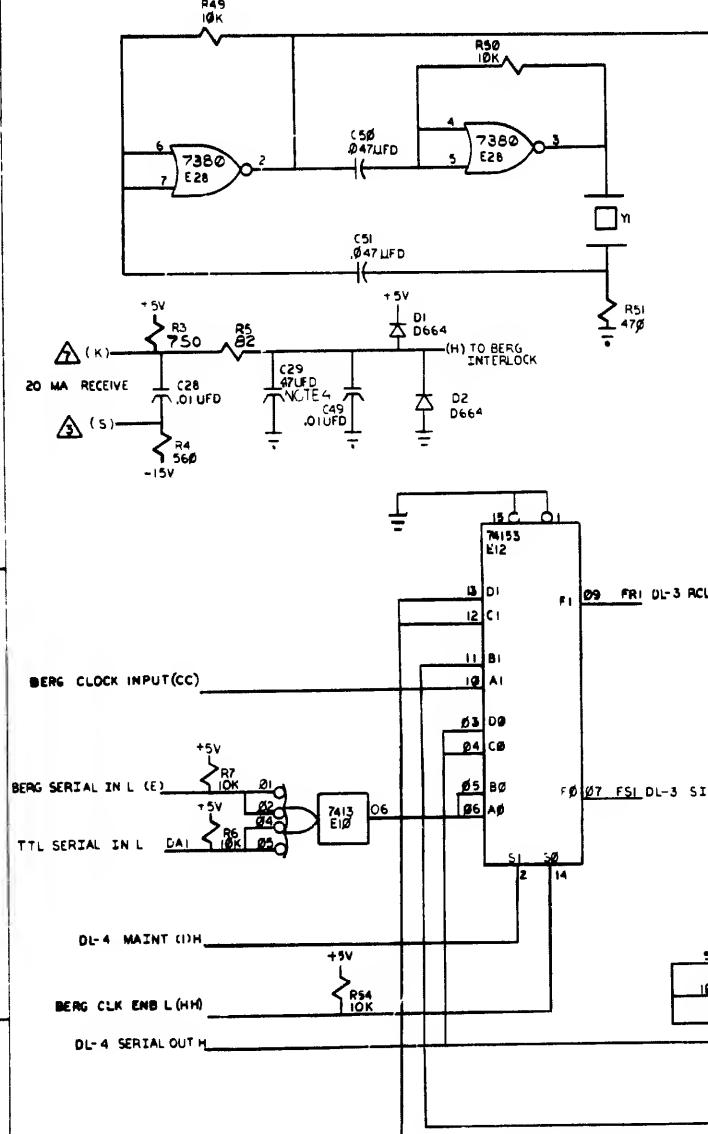
100 M7800 - YA - 000018 J
90 - 140000 18 OCT T-76
S. MASAND
3.000000 11/7/76
21. M7800 - YA - 00002 K
S. HARRINGTON
R. HARRINGTON 2 AUG 76

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
				PARTS LIST
DLII				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS	ANGLES			
.XXX - .005	± 0° 30'			
.XX - .02				
.X - .1				
REMOVE BURNS AND BREAK SHARP CORNERS SURFACE QUALITY ✓				
MATERIAL		NEXT HIGHEST AMT.		
FINISH		SCALE	DRAWING NO. M7800-YA-1	
		SHEET 2 OF 6	DIST.	K

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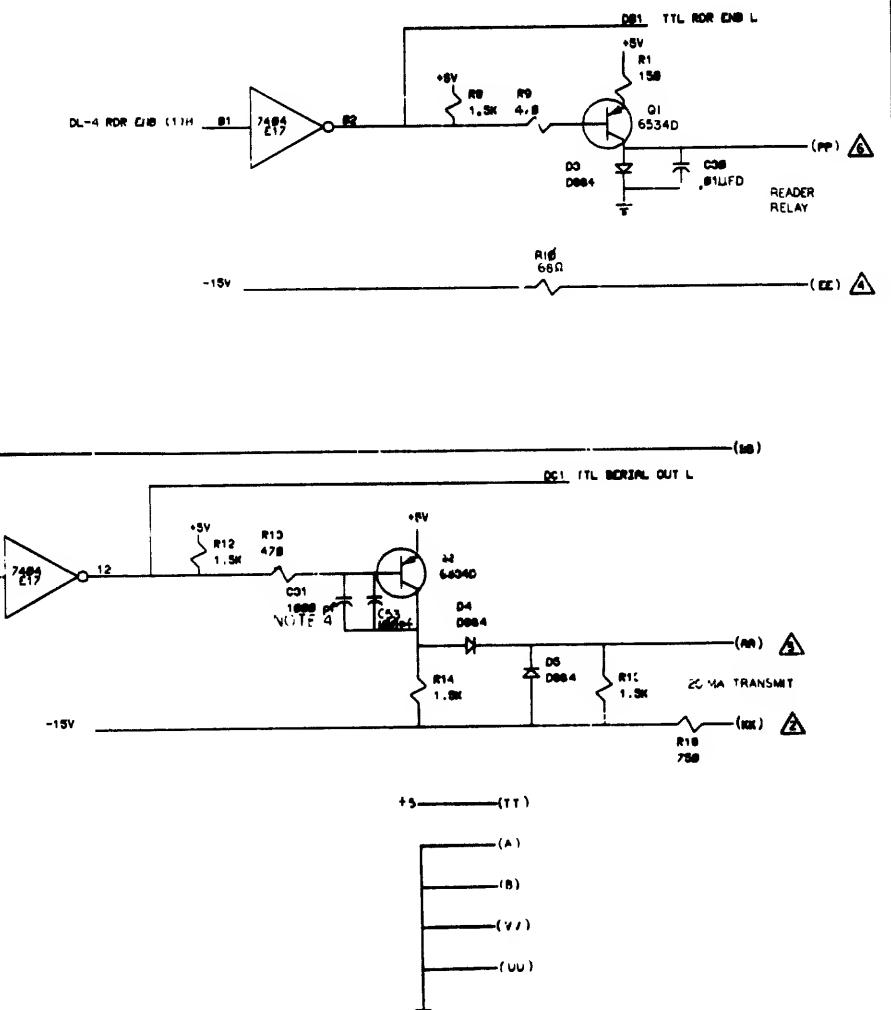
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D



SEE NOTE 3				
Y1	844.8 KHZ	103296 MHZ	1.152 MHZ	4.608 MHZ
SWITCH POS.	BAUD USEC	BAUD USEC	BAUD USEC	BAUD USEC
1	36.7	1700	448	1342
2	55	1135	67.3	928
3	110	567	134.5	464
4	220	284	232	300
5	440	142	538	116
6	880	71	1076	58
7	1320	47.4	1614	38.7
8	1760	35.5	2152	29
9			2400	26
			9600	6.5
				10 EXTERNAL CLOCK INPUT-COMMON TO RCVR AND XMIT

DL-3 BB IN H	DL2	PRIORITY	18 DD2 BUS BR7 L
DL-6 BB OUT H	DV2	PLUG	15 DE2 BUS BR6 L
BUS BG4 OUT H	DT2	19	14 DF2 BUS BR5 L
BUS BG4 TN H	D82		13 DH2 BUS BR4 L
BUS BG5 OUT H	DX2		12 DJ2 BUS BR7 IN H
BUS BG5 IN H	DP2		11 DK2 BUS BR7 OUT H
BUS FG8 OUT H	DW2		10 DL2 BUS BR6 IN H
			89 DM2 BUS BR6



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
DLII			
UNLESS OTHERWISE SPECIFIED			
DIMENSIONS IN INCHES			
TOLERANCES			
DECIMALS	ANGLES		
.XX	±0° 30'		
.X	±1°		
REMOVE SURFS AND BREAK SHARP			
CORNERS SURFACE QUALITY			
MATERIAL			
FINISH			

EQUIPMENT CORPORATION

ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3

REV. K

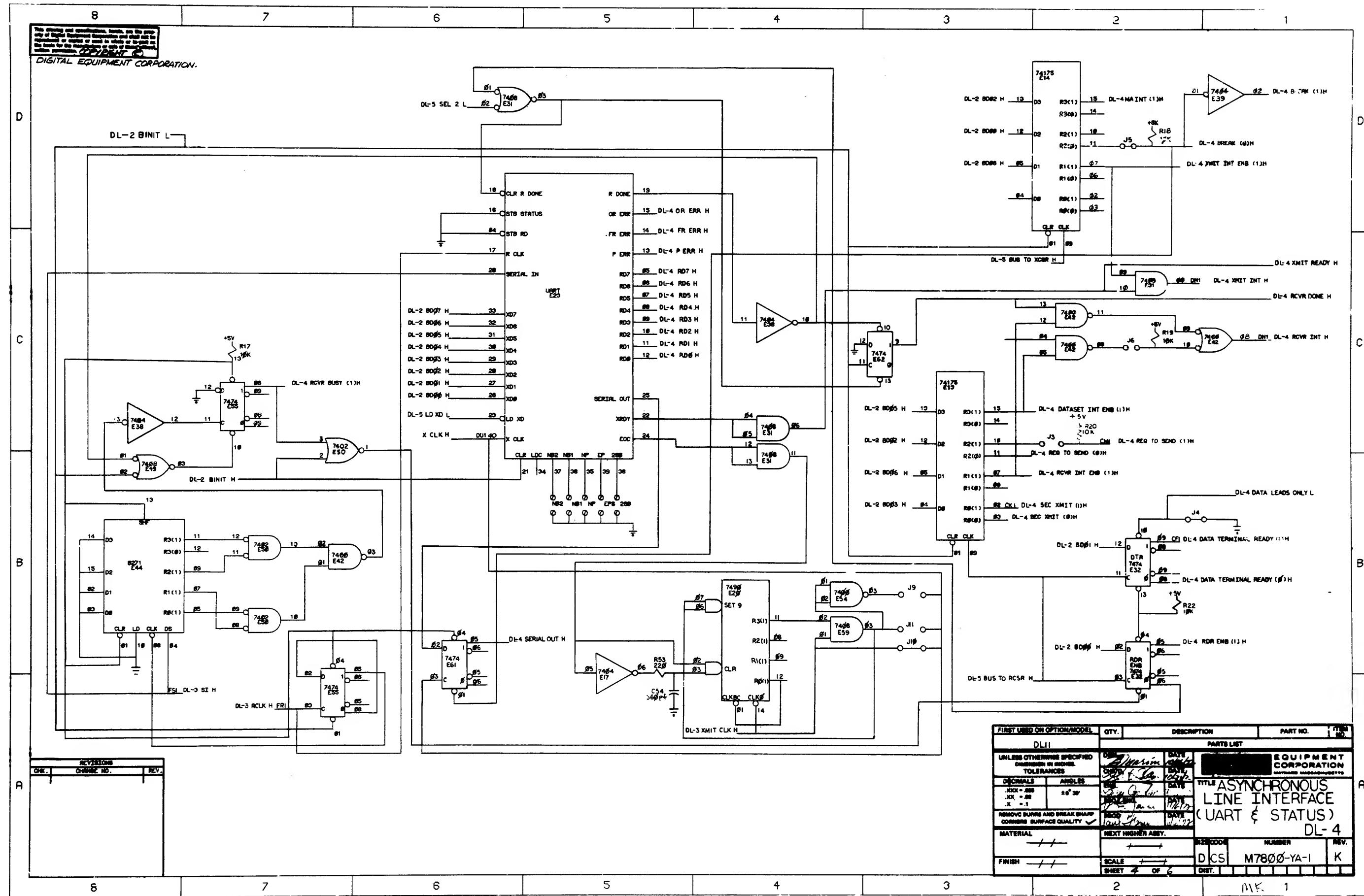
NOTES:

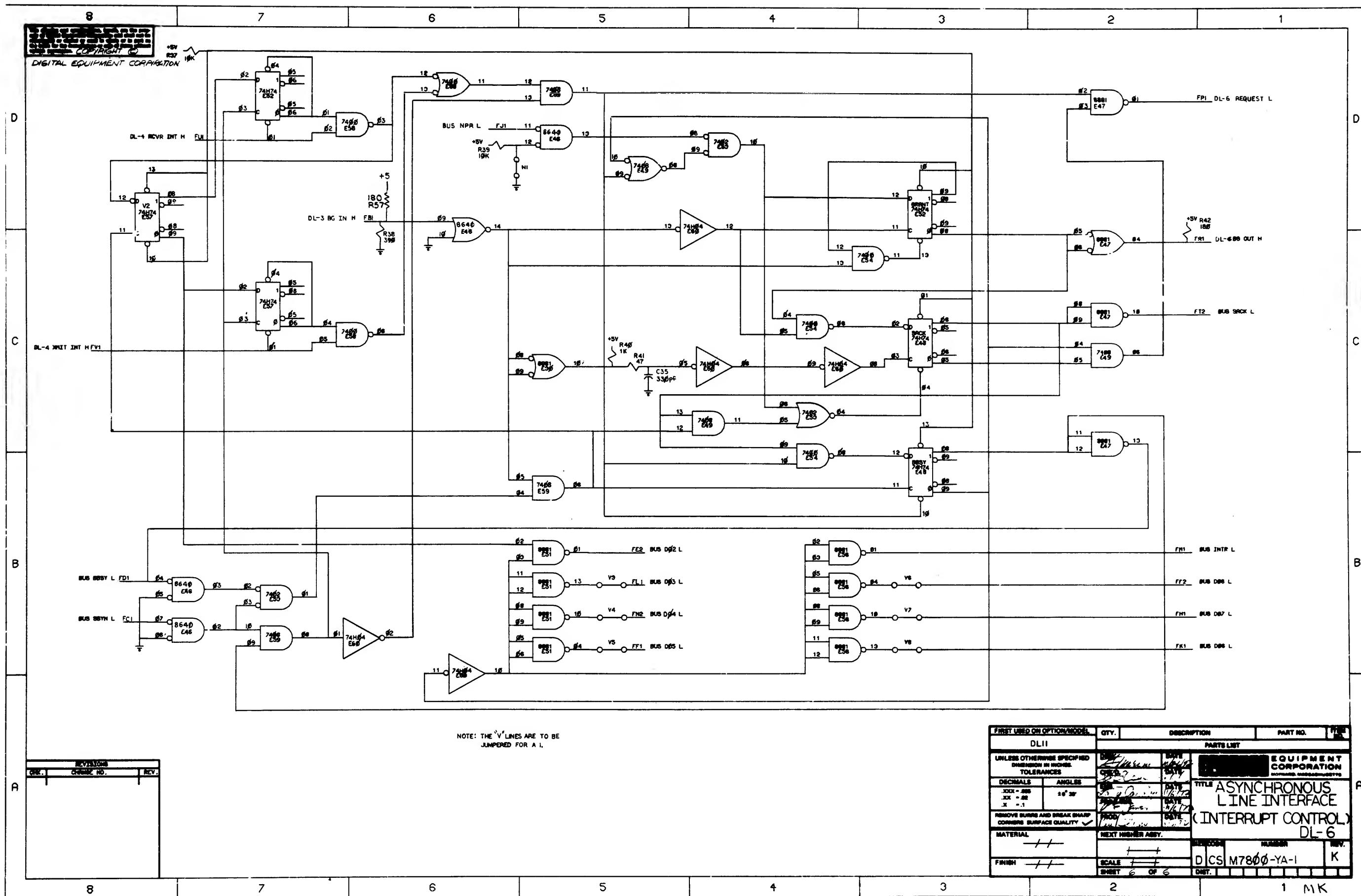
- LETTERS ENCLOSED IN PARENTHESES REFER TO PINS ON THE BERG CONNECTOR, EXAMPLE (X)
- NUMBERS WITHIN TRIANGLES REFER TO PINS ON THE FEMALE MATE-N-LOCK CONNECTOR WHEN USING THE 7008360 CABLE, THIS CABLE ALSO CONNECTS BERG PINS H TO E.
- ALTHOUGH THE ABOVE TABLE INCLUDES ONLY THE STANDARD DLII CRYSTALS OTHER VALUES MAY BE SPECIFIED BY THE CUSTOMER OR BY OTHER DOCUMENTATION OF AN OPTION WHICH USES THE DLII.
- REMOVE C29 AND C31 FOR OPERATION AT FREQUENCIES ABOVE 150 BAUD

REV. K

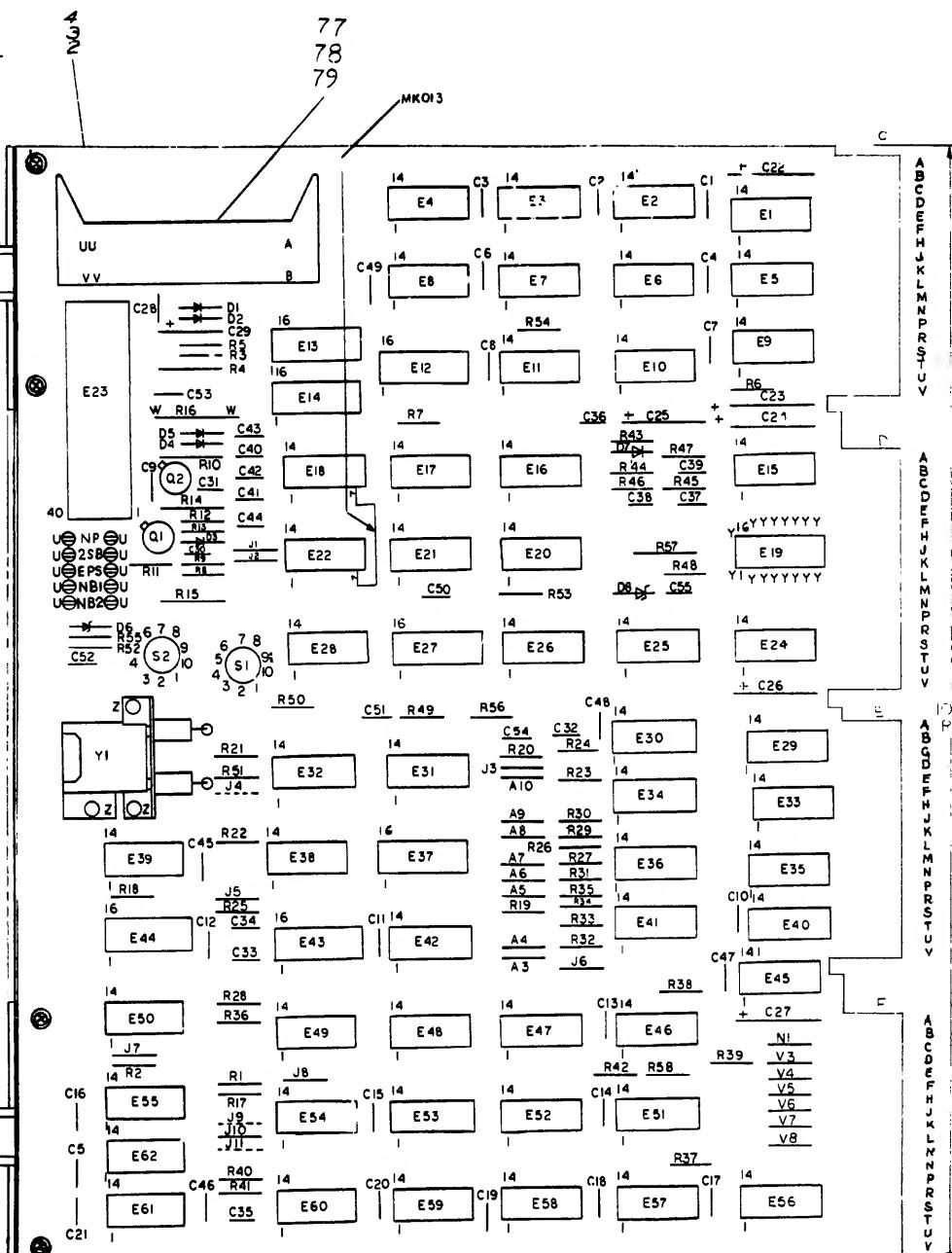
CHG. NO.

REV.





8
I
J
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E
D
C
B
A



DEC 74161	8	16	—	—
DEC 1400	7	—	14	1
DEC 1400	3	1	—	2
DEC 74175	8	16	—	—
DEC 6871	8	16	—	—
DEC 74182	8	16	—	—
DEC 514	1	8	—	—
DEC 74093	10	8	—	—
DEC 74092	10	5	—	—
DEC 74153	8	16	—	—
DEC 74153	8	16	—	—
DEC 8640	10	8	—	—
DEC 74090	10	8	—	—
DEC 74183	5	16	—	—
IC TYPE	800	+8V	+V	-12V

500 AND 800 ARE USUALLY PIN 7 AND 14
RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

NOTES:

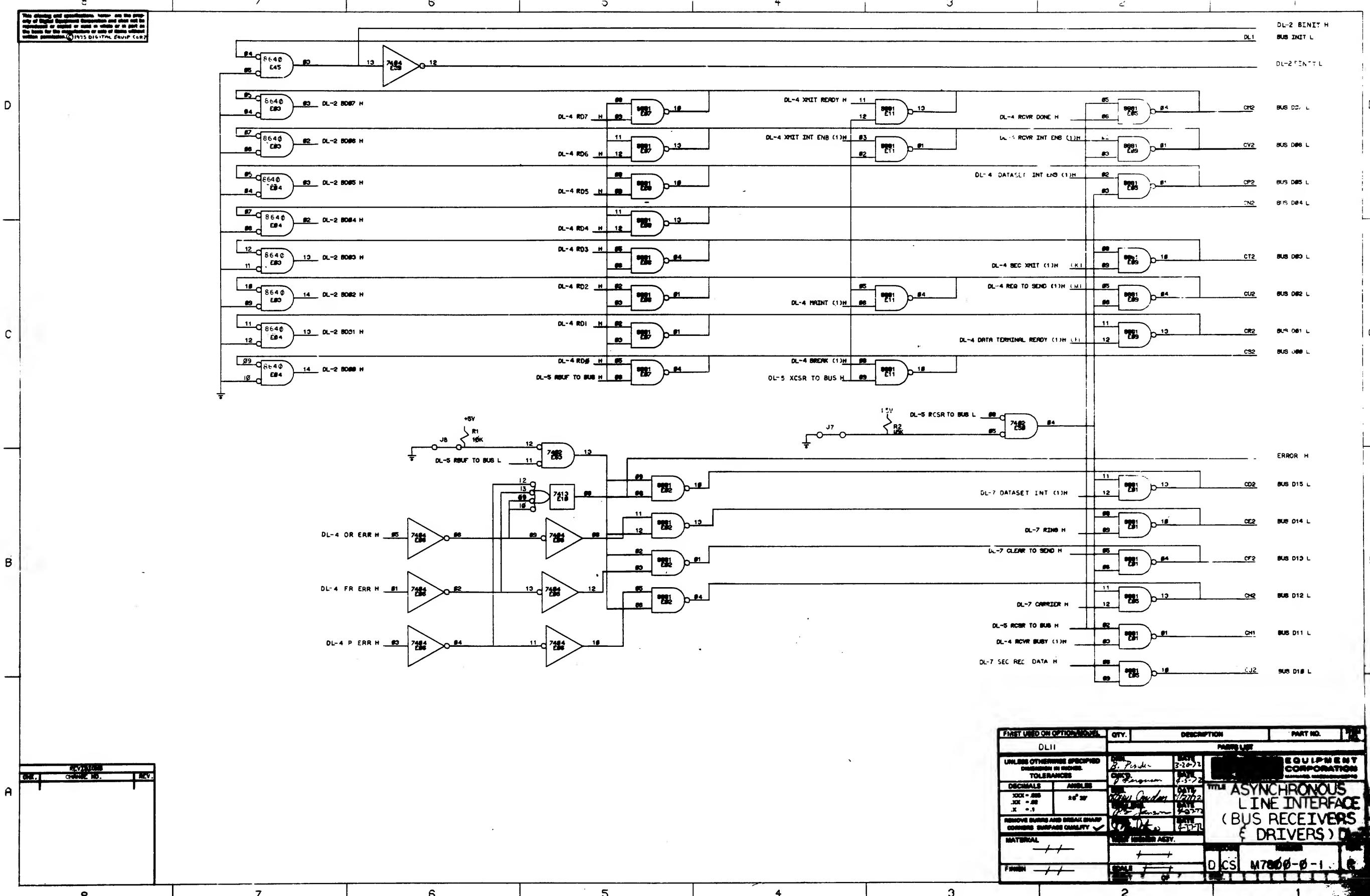
- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE SYSTEM UNIT. MODULE REFERENCE ALONE IS OBTAINED BY CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT THE LEFT.
- JUMPERS TO BE USED AT CONNECTIONS A3-A10, J1-J10, V3-V8, AND N1.
- LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE: (X).

**PIN NOMENCLATURE
MODULE SYSTEM UNIT**

4 DEC B6405 NERE PHASED IN AS DEC 3800 REPLACEMENTS ANY 380 FAILURES SHOULD BE REPLACED BY B6405'S EXCEPT E28, E28 MUST BE REPLACED WITH A 7380.

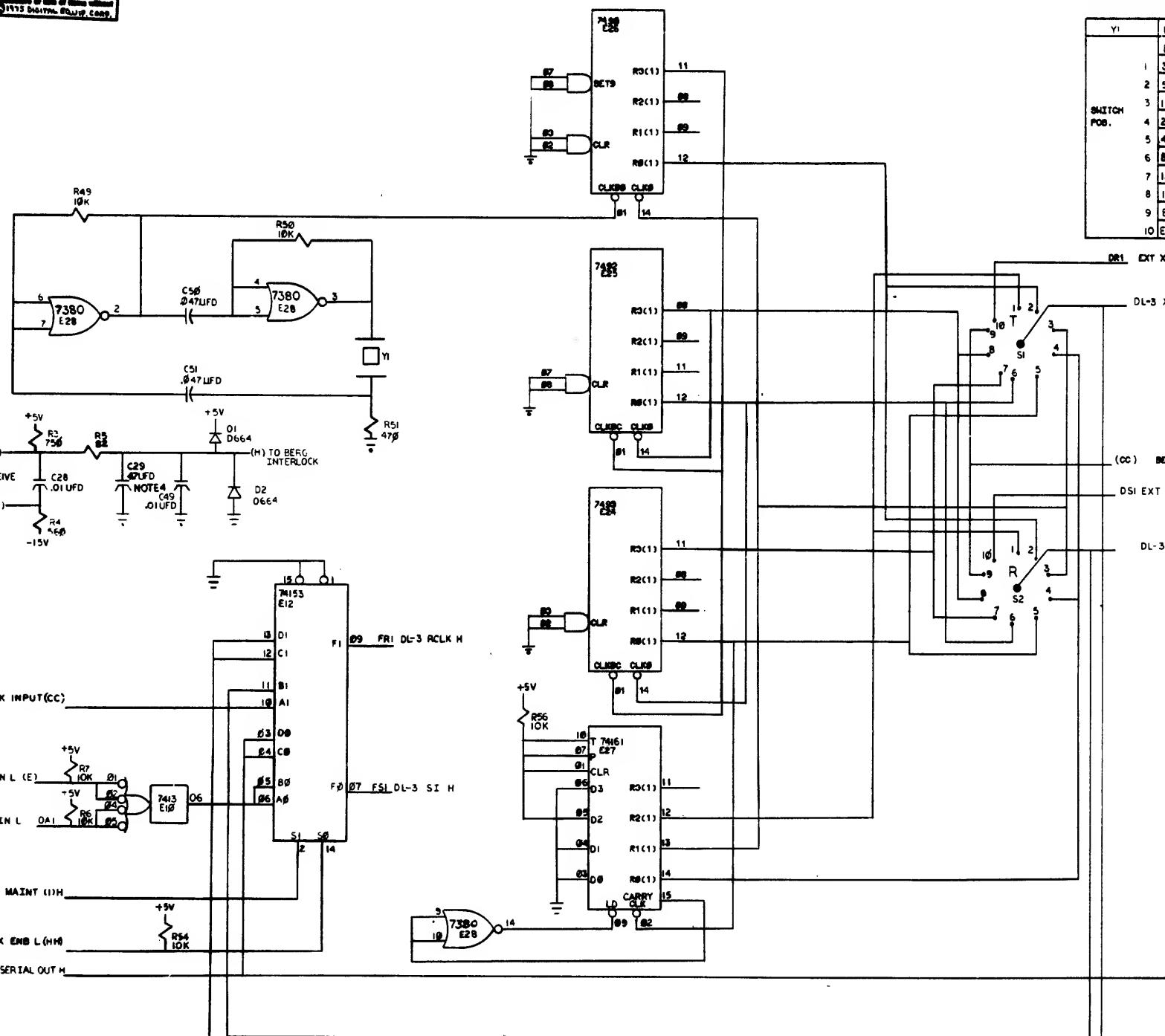
5. FOR YC VERSION, C36 VALUE IS 1200PF.

Y	C	IC DEC 7380	1910390
1	1	LATCH RIGHT	1209941-04
1	1	LATCH LEFT	1209941-03
1	1	CONNECTOR BERG	1209941-02
1	0	INSULATED JUMPER	9009185
1	0	CAP 1200 PF 100V 5%	900424
1	0	WIRE 22-25610 6V5	9107560-01
1	0	RES 39, 11W, 570	1302336
1	0	DIODE 4742, 12V, 10W, ZENER	1101592
3	3	INT. WASHER #2	9006631
1	1	IC DEC 74161	1910630
1	3	INJ. HEX #2	9006555
3	3	SCR PH. PAN HD 256A/416	1202501
2	2	ALGAT 5000 100V	1202502
6	6	TRANSISTOR 2N2222A 100V	19104860
2	2	TRANSISTOR 2N2222A 100V	1903409-00
1	1	CAP 100PF (COV 3.5% 100V) 1000016	1000016
2	2	CAP 560PF (COV 3.5% 100V) 100002	100002
2	2	CAP 04.7MF CERAMIC 1005678	1005678
2	2	CAP 220PF (COV 3.5% DIPPED 100V) 1000023	1000023
2	2	CAP 330PF (COV 3.5% DIPPED 100V) 1000024	1000024
3	9	CAP 470PF (COV 3.5% DIPPED 100V) 1000025	1000025
1	1	CAP 100PF (COV 3.5% DIPPED 100V) 1000026	1000026
30	30	CAP 100PF (COV 3.5% DIPPED 100V) 1000027	1000027
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000028	1000028
6	6	CAP 470PF (COV 3.5% DIPPED 100V) 1000029	1000029
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000030	1000030
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000031	1000031
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000032	1000032
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000033	1000033
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000034	1000034
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000035	1000035
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000036	1000036
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000037	1000037
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000038	1000038
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000039	1000039
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000040	1000040
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000041	1000041
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000042	1000042
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000043	1000043
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000044	1000044
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000045	1000045
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000046	1000046
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000047	1000047
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000048	1000048
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000049	1000049
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000050	1000050
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000051	1000051
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000052	1000052
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000053	1000053
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000054	1000054
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000055	1000055
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000056	1000056
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000057	1000057
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000058	1000058
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000059	1000059
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000060	1000060
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000061	1000061
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000062	1000062
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000063	1000063
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000064	1000064
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000065	1000065
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000066	1000066
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000067	1000067
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000068	1000068
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000069	1000069
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000070	1000070
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000071	1000071
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000072	1000072
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000073	1000073
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000074	1000074
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000075	1000075
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000076	1000076
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000077	1000077
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000078	1000078
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000079	1000079
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000080	1000080
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000081	1000081
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000082	1000082
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000083	1000083
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000084	1000084
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000085	1000085
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000086	1000086
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000087	1000087
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000088	1000088
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000089	1000089
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000090	1000090
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000091	1000091
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000092	1000092
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000093	1000093
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000094	1000094
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000095	1000095
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000096	1000096
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000097	1000097
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000098	1000098
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000099	1000099
1	1	CAP 470PF (COV 3.5% DIPPED 100V) 1000100	1000100
1	1	CAP 470PF (CO	



The following are specifications, limits, and the procedure of these minimum temperatures and shall not be exceeded or equaled or used in whole or in part as the basis for the requirements or basis of claims without written permission. (1915 Digital Scale, Case

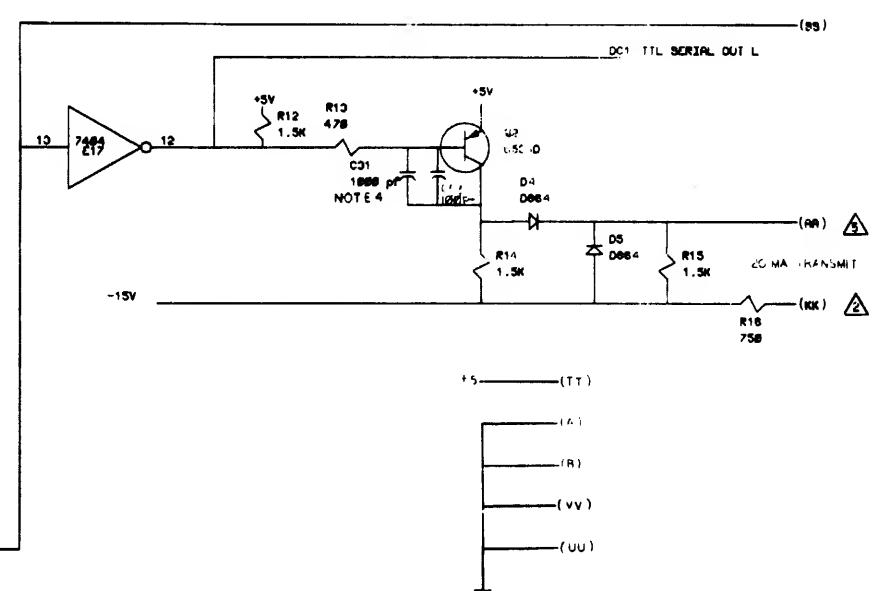
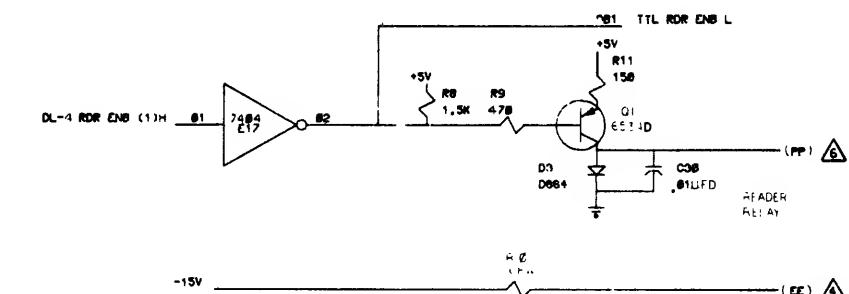
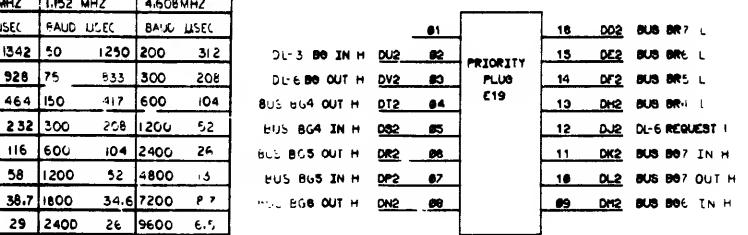
SEE NOTE 3



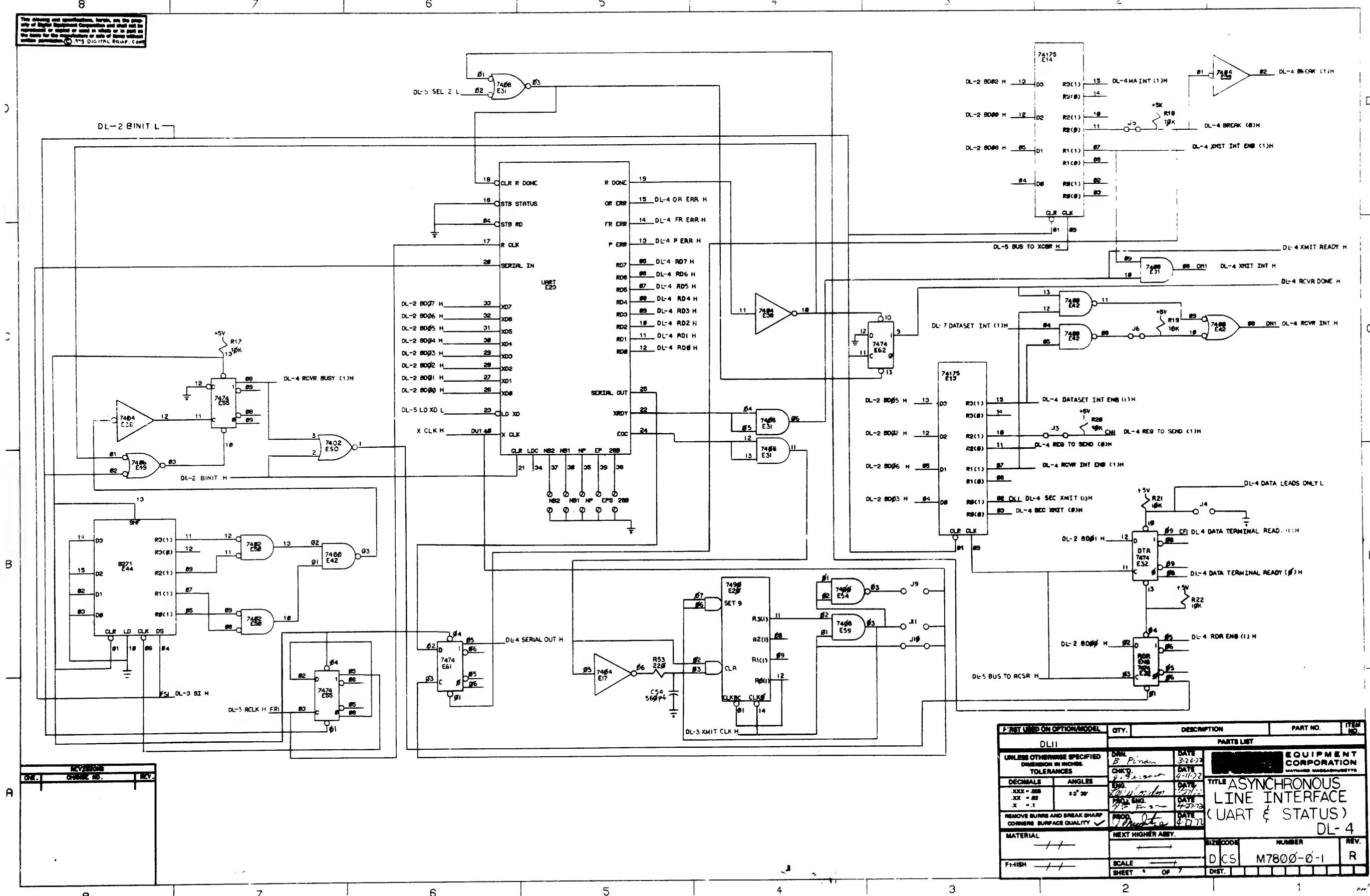
NOTES:

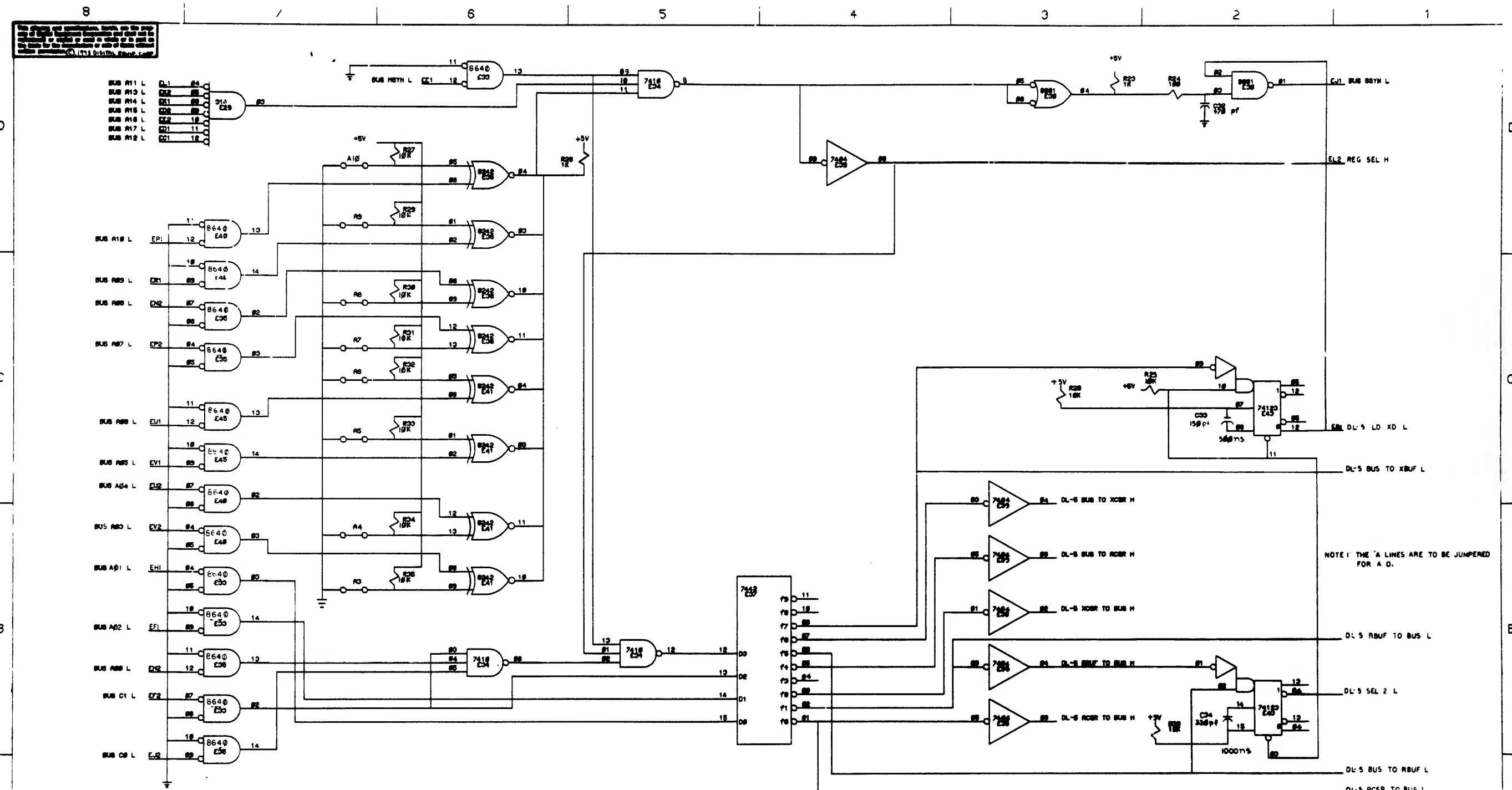
1. LETTERS ENCLOSED IN PARENTHESIS REFER TO PINS ON THE BERG CONNECTOR. EXAMPLE(X)
2. NUMBERS WITHIN TRIANGLES REFER TO PINS ON THE FEMALE MATE-N-LOCK CONNECTOR WHEN USING THE 7008360 CABLE. THIS CABLE ALSO CONNECTS BERG PINS H TO E.
3. ALTHOUGH THE ABOVE TABLE INCLUDES ONLY THE STANDARD DLII CRYSTALS OTHER VALUES MAY BE SPECIFIED BY THE CUSTOMER OR BY OTHER DOCUMENTATION OF AN OPTION WHICH USES THE DLII.
4. C29 AND C31 ARE REQUIRED FOR 20MA. OPERATION AT 150MA OR LESS, DLII-A OR C.

Y1	844.8 KHZ	103296 MHZ	1.152 MHZ	4.608 MHZ
	BAUD USEC	BAUD USEC	BAUD USEC	BAUD USEC
1	36.7	1700	44.8	1342
2	35	1135	67.3	928
3	110	567	134.5	464
4	220	284	269	232
5	440	142	538	116
6	880	71	1076	58
7	1520	47.4	1614	38.7
8	1760	35.5	2152	29
9	BERG CLOCK INPUT- COMMON TO RCVR AND XMIT			
10	EXTERNAL CLOCK INPUT- RCVR; DS1/XMIT DRI			

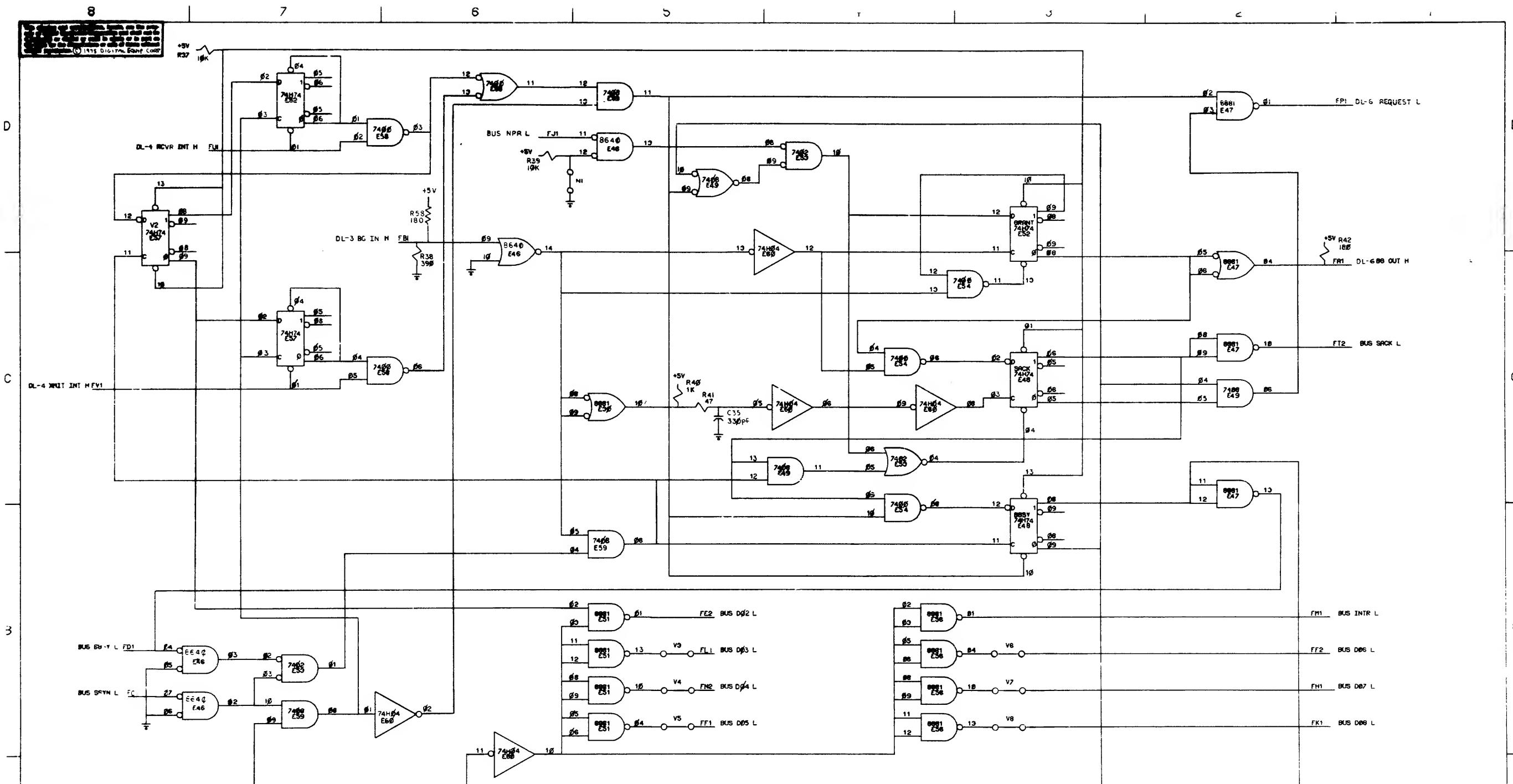


FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.
DL11			PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRWL B-1.1	DATE 3-26-72	EQUIPMENT CORPORATION WATERTOWN, MASSACHUSETTS
		CHK'D. T-1	DATE 4-5-72	
DECIMALS	ANGLES	ENG. K-100	DATE 4-27-72	TITLE ASYNCHRONOUS LINE INTERFACE (CLOCK & CURRENT LOOPS) DL-3
XX = .005 XX = .05 X = .1	± 0° 30'	PROF. 3000 P-100	DATE 5-2-72	
REMOVE SURFS AND SMOOTH SHARP CORNERS SURFACE QUALITY ✓		PROF. 3000 P-100	DATE 4-17-72	NEXT HIGHER ASY.
MATERIAL		PROF. 3000 P-100	DATE 4-17-72	
FINISH		SCALE SHEET 3 OF 7	UNIT	NUMBER M7800-0-1
			D CS	R





ITEM 10. DIMENSIONS		QTY.	DESCRIPTION	PART NO.	ITEM NO.
DLII		PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES. TOLERANCES		DRAWN B. Pinder	DATE 7-20-71	EQUIPMENT CORPORATION INDUSTRIAL ELECTRONICS	
DECIMALS	ANGLES	CHKD J. L. Johnson	DATE 4-5-72	TITLE ASYNCHRONOUS LINE INTERFACE (ADDRESS SELECTION)	
.0000 - .000	± 0° 30'	SUPERVISED S. C. Johnson	DATE 4-27-72	DL-5	
.000 - .00		REMOVED J. L. Johnson	DATE 4-27-72	REV.	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		REMOVED J. L. Johnson	DATE 4-27-72	NUMBER	
MATERIAL		NEXT HIGHER AMT.		D. C. S. M 7800-0-1	
FINISH		SCALE	INCHES	R	
		SHEET 5	OF 7	DRAFT.	



NOTE: THE "V" LINES ARE TO
JUMPERED FOR A 1.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DL11			PARTS LIST	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DRAWN B.P. 1-1	DATE 3-20-72	EQUIPMENT CORPORATION MOUNTAIN, MASSACHUSETTS
.XXX - .005	±0° 30'	CHK'D. F. ...	DATE 9-6-12	
.XX - .02		ENG. 2004 Gordon	DATE 4/27/74	TITLE
.X - .1		PROF. ENG. F. ...	DATE 3-27-83	ASYNCHRONOUS LINE INTERFACE
REMOVE BURRS AND BREAK CORNERS SURFACE QUALITY ✓				
NEXT HIGHER ASBY.				
MATERIAL	/ / /			
FINISH	/ / /			
SCALE	1 / 1			
SHEET	8 OF 7			
DRAWN.				

1

8
1979 DIGITAL EQUIP. CO.

7 6 5 4 3 2 1 0

DL-4 SERIAL OUT H

DL-4 DATA TERMINAL READY (T)

DL-4 SEC XMIT (T)

DL-4 DATA LEADS ONLY L

DL-4 REQ TO SEND (T)

DL-7 RING H

DL-7 CARRIER H

DL-7 CLEAR TO H

DL-7 SEC REC D

DL-5 RCSR TO BUS L

DL-2 BINIT L

(M) (TO BERG INTER

(F) EIA XMIT DATA

(DD) EIA DATA TERMINAL READY

(FF) EIA SEC XMIT DATA

(V) EIA REQ TO SEND

(C) EIA FORCE BUSY

22 EIA RING (X)
TTL RING DFI

8 EIA CARRIER (B6)
TTL CARRIER DEI

5 EIA CLEAR TO SEND (T)
TTL CLEAR TO SEND DDI

12 EIA SEC REC DATA (W)
TTL SEC REC DATA DHI

13 EIA RECEIVE DATA (J)

148SL E18
7404 E17
7404 E16
7404 E15
7474 E61
7404 E19

R1-R10, C1-C10

NOTES:

1. LETTERS ENCLOSED - EXAMPLE (M)
REFER TO PINS ON THE BERG CONNECTOR.
2. NUMBERS WITHIN BOXES REFER TO PINS
ON THE MALE C:INCH CONNECTOR WHEN
USING THE BEGOS-C CABLE. THIS CABLE
ALSO CONNECTS BERG PINS M TO E.

* FOR YC VERSION, C36 VALUE CHANGES TO 1200F

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
				PARTS LIST
DL1				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRAWN By: <i>P. Picard</i>	DATE 3-20-72	EQUIPMENT CORPORATION WATERTOWN, MASSACHUSETTS
DECIMALS	ANGLES	CHK'D By: <i>J. S. [Signature]</i>	DATE 9-5-72	
.000 = .000	± 0° 30'	REV. By: <i>Tommy Conner</i>	DATE 10-22-72	
.000 = .002		PROBLEMS	DATE 9-27-72	
.000 = .1		PROD. BY: <i>John D. Simon</i>	DATE 9-27-72	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓		NEXT HIGHER ASBLY.	DATE 9-27-72	
MATERIAL	---	REVISION	NUMBER	REV.
FINISH	---	SCALE	D C S M 7800 - 0 - 1	R
		SHEET 7 - OF 7	DIST.	

This agreement, herein, are the
use of the name "Corporation" and shall
not be used or used in whole or in
part in the manufacture or sale of items

WIRE TRAY

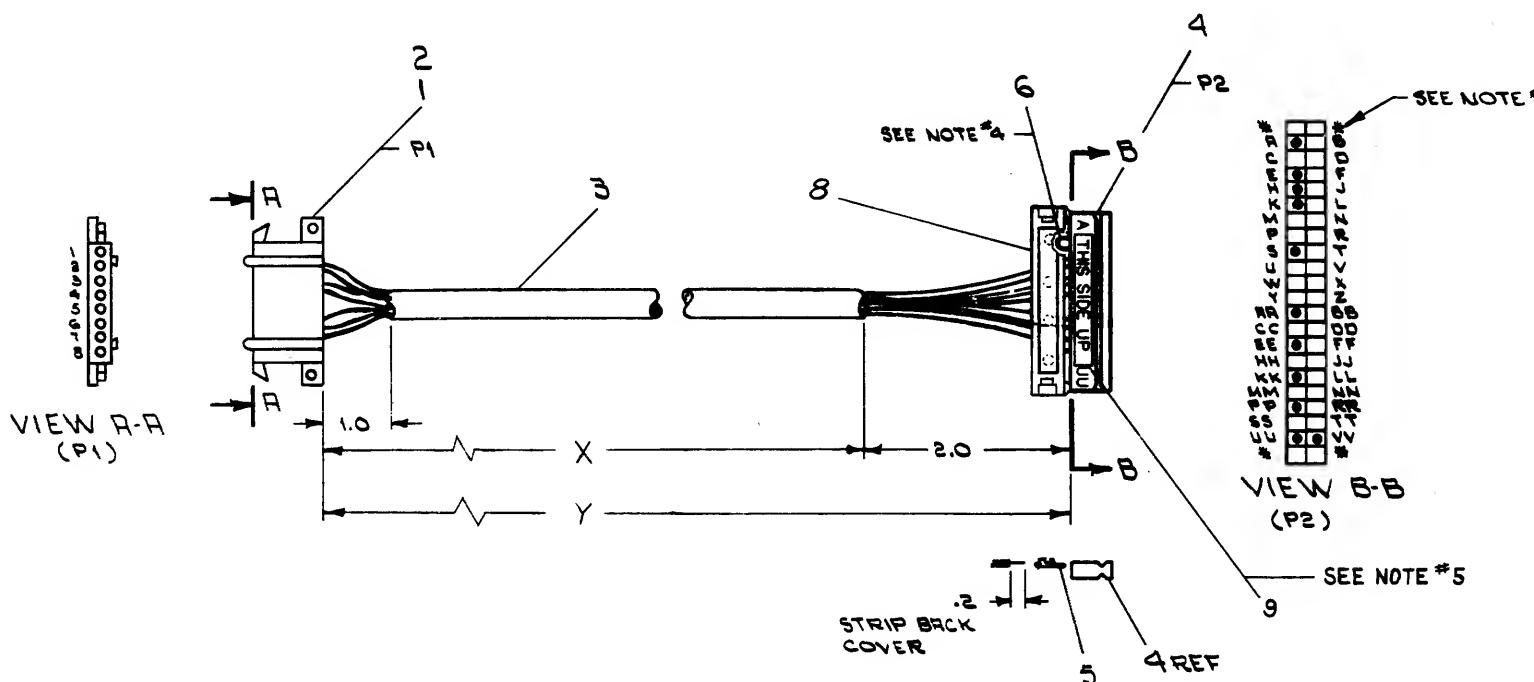
WIRE TABLE							
ITEM NO.	AWG	DESCRIPTION COLOR	PAIR NO.	FROM CONNECTION		TO CONNECTION	
				WITH	WITHOUT	WITH	WITHOUT
3	22	BLK		P1-2		2	P2-KK
3	1	RED	1	P1-3		2	P2-S
3,7		SHIELD		SEE NOTE #2		—	P2R(NOTE #3)
3		BLK		P1-4		2	P2-EE
3		WHT	2	P1-5		2	P2-RR
3,7		SHIELD		SEE NOTE #2		—	P2-U(WHITES)
3		BLK		P1-G		2	P2-PP
3		GRN	3	P1-T		2	P2-K
3,7		SHIELD		SEE NOTE #2		—	P2W(NOTE #3)
6	22	BLK	—	P2-E		2	P2-H

LEGEND

LEGEND		
VARIATION	LENGTH	
	X	Y
7008360-0	25IN \pm 10	27IN \pm 10
7008360-1	46IN \pm 10	48IN \pm 10
7008360-9	SET \pm 2IN	9FT2IN \pm 2IN

NOTES

1. * ASTERisks INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
2. DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
3. DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM "7" (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
4. ITEM "G" (WIRE) TO BE APPROXIMATELY ONE (1) INCH LONG.
5. PLACE ITEM "9" ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM "4" (BERG HOUSING) AS SHOWN.



1	LABEL, THIS SIDE UP	3611567	9
1	STRAIN RELIEF	1211166	8
AIR	TUB, #18 TEF. THINWALL NAT	910776-11	7
AIR	WIRE, #22 AWG STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP# 47216	12100889-01	8
1	HOUSING, BORG #65043-015	1210918-15	4
AIR	CABLE, BELDEN#1777-3PR SHLD	9107723-0	3
6	CONTRACT MATE-N-LOCK(FEMALE)	1209879-03	2
1	CONNL MATE-N-LOCK(FEMALE)	1209840-00	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION/MODEL PDP-8E	DO NOT SCALE DRAWING		DATE NAME 'W	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES			
TOLERANCES		ANGLES $\pm 10^\circ$	DATE 4-4-71	
FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS		DATE 4-4-71	DATE 4-4-71	
MATERIAL		DATE 4-4-71	DATE 4-4-71	
SEE PARTS LIST		NEXT HIGHER ASSY A-ML-KL8-E-0		
FINISH		SCALE NONE		DIA 7008360-0-0
		SHEET 1 OF	DRAFT.	

**CABLE ASSEMBLY
(K1 8F)**

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WIRE TABLE

ITEM NO.	DESCRIPTION	FROM		TO	
		AWG	COLOR	CONNECTION	WITH
1 26	BLU/WHT	PI-1	*	12	JI-VV
	WHT/BLU	PI-2	8	JI-F	
	ORN/WHT	PI-3		JI-J	
	WHT/ORN	PI-4		JI-V	
	GRN/WHT	PI-5		JI-T	
	WHT/GRN	PI-6	8	JI-Z	
	BRN/WHT	PI-7	*	12	JI-UU
	WHT/BRN	PI-8	8	JI-BB	
	SLA/WHT	PI-9		JI-Y	
	WHT/SLA	PI-10		JI-W	
	BLU/RED	PI-11		JI-FF	
	RED/BLU	PI-12		JI-JJ	
	ORN/RED	PI-13		JI-D	
	SLA/RED	PI-14		JI-LL	
1 26	SLA/GRN	PI-15	8	JI-N	7

ITEM NO.	DESCRIPTION	FROM		TO	
		AWG	COLOR	CONNECTION	WITH
1 26	RED/BRN	PI-16	8	JI-NN	7
	SLA	PI-17		JI-R	
	RED/SLA	PI-18		JI-U	
	BLU/BLK	PI-19		JI-P	
	BLK/BLU	PI-20		JI-DD	
	ORN/BLK	PI-21		JI-MM	
	BLK/ORN	PI-22		JI-X	
	GRN/BLK	PI-23		JI-RR	
	BRN/RED	PI-24		JI-L	
	RED/ORN	PI-25	8	JI-C	
1	SHIELD	PI-1	*	12	JI-A
	SHIELD	PI-7	**	12	JI-B
2	BLK	PI-1	*	12	PI-7 ** 12
2 26	RED	JI-E	7	JI-M	7

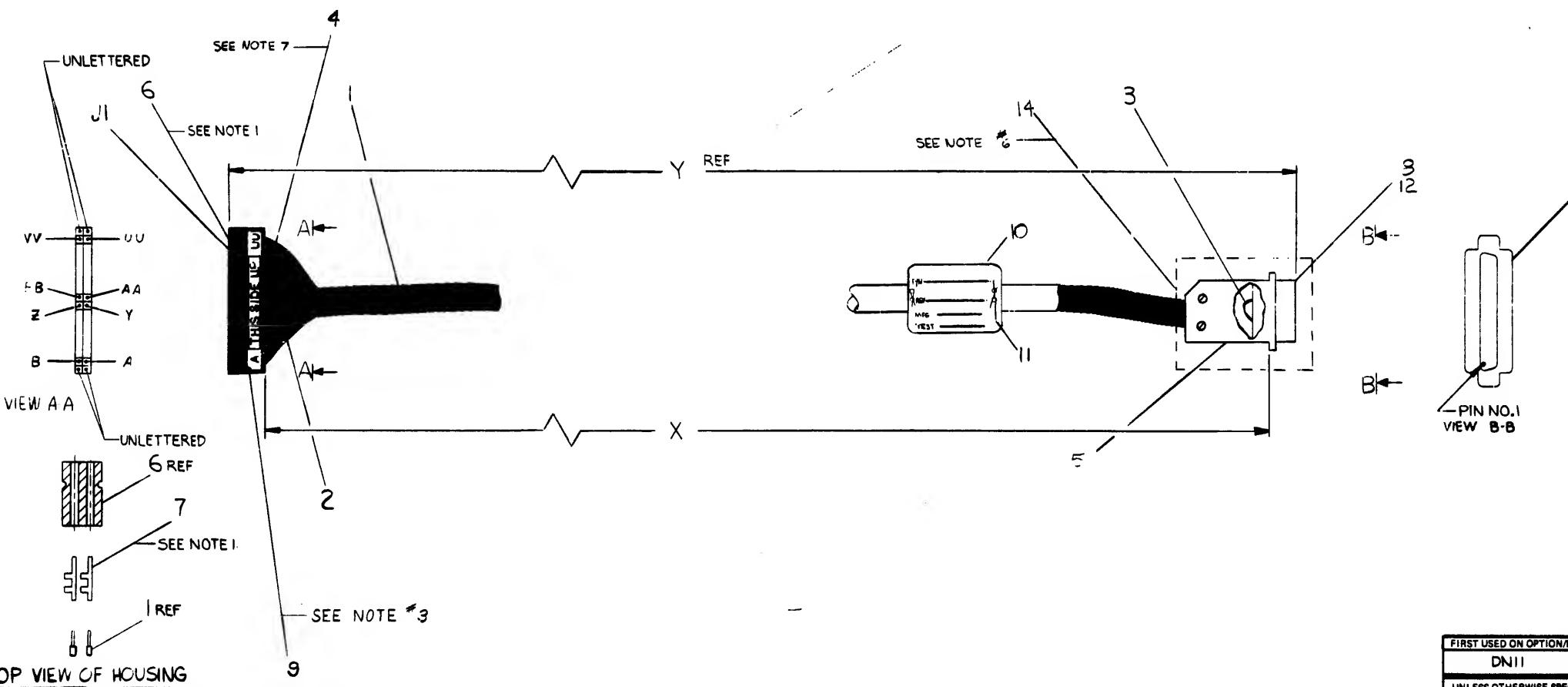
NB * DENOTES THREE WIRES ARE SOLDERED INTO THE PI-1 SOLDER CUP
** DENOTES THREE WIRES ARE SOLDERED INTO THE PI-7 SOLDER CUP

LEGEND

NUMBER	VARIATION	
	DIM X	DIM Y (PRECUT)
BC05C-25	25 ± 3"	25 1/8"
BC05C-50	50 ± 2%	50 1/8"
BC05C-09	9 ± 3"	9 1/8"
BC05C-1F	18 ± 1"	19 8"

NOTES:

- MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT68 FROM BERG ELECT
- ONLY DEC PART #1210918-15 MAY BE USED AS JI.
- PLACE ITEM #9 ("THIS SIDE UP" STICKER) ON LETTERED SIDE OF ITEM #6 (BERG HOUSING) AS SHOWN.
- USE ITEM #13 (907256) IN TWO PLACES (PI-7) TO PREVENT SHORTING
- USE ITEM #12 (907255) ON ALL REMAINING SOLDER CUPS TO PREVENT SHORTING
- DUE TO ± TOLERANCES WITH DIFFERENT VENDORS THE HOOD (ITEM #5) MAY VARY IN OUTSIDE DIAMETER CAUSING POTENTIAL STRAIN RELIEF GRIPPING PROBLEM. SHOULD THIS CONDITION BE PRESENT USE ITEM #4 (9107834) AT JUNCTION OF CABLE AND HOOD.
- PLACE ITEM #4 (9107256) OVER SHIELD WIRE JI-A, JI-P, PI-1, PI-7.



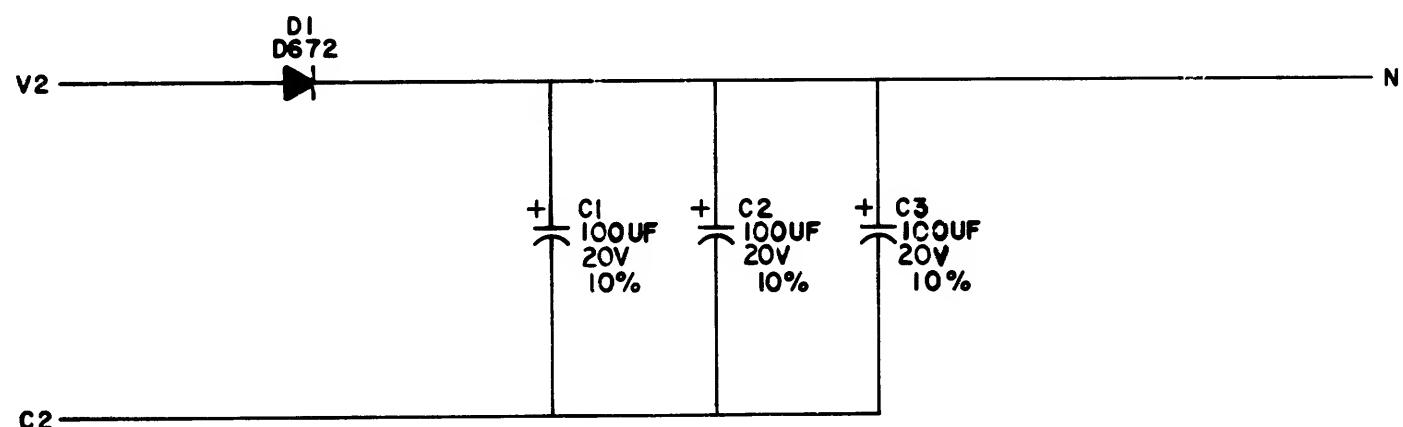
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
DN11				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES				
DECIMALS ANGLES				
XXX = .006 ± 0° 30'				
XX = .02				
X = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓				
MATERIAL ✓				
NEXT HIGHER ASY. ✓				
FINISH ✓				

PARTS LIST		EQUIPMENT CORPORATION	
TITLE		CABLE, MODEM BC05C	
ITEM NO.		NUMBER BC05C-0-0 H	
REV.		SCALE 1:1	
MATERIAL		DRAFTED 11/19/78	
FINISH		CHCK 11/19/78	
TOLERANCES		DATE 11/19/78	
DECIMALS		PROD. 11/19/78	
ANGLES		MATERIAL 11/19/78	
XX = .006		FINISH 11/19/78	
XX = .02		SHEET 1 OF 1	
X = .1		DRAFTED 11/19/78	

CHG NO.	REV.	ITEM NO.	REV.
1	A	BC05C-00001	A
2	B	BC05C-00002	B
3	C	BC05C-00003	C
4	D	BC05C-00004	D
5	E	BC05C-00005	E
6	F	BC05C-00006	F
7	G	BC05C-00007	G
8	H	BC05C-00008	H
9	I	BC05C-00009	I
10	J	BC05C-00010	J
11	K	BC05C-00011	K
12	L	BC05C-00012	L
13	M	BC05C-00013	M
14	N	BC05C-00014	N
15	O	BC05C-00015	O
16	P	BC05C-00016	P
17	Q	BC05C-00017	Q
18	R	BC05C-00018	R
19	S	BC05C-00019	S
20	T	BC05C-00020	T
21	U	BC05C-00021	U
22	V	BC05C-00022	V
23	W	BC05C-00023	W
24	X	BC05C-00024	X
25	Y	BC05C-00025	Y
26	Z	BC05C-00026	Z

SIZE CODE CS 68000-0-1 NUMBER A REV

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REVISIONS	
CHK	CHG NO.
2	REV A
1	REV B
0	REV C
1	REV D
2	REV E
3	REV F
4	REV G
5	REV H
6	REV I
7	REV J
8	REV K
9	REV L
S	S. SHAPPIES
M	M. KAMM

DRN. *S. Cooper* DATE *1/19/71*
 CHK'D. *J. Hart* DATE *2/13/71*
 ENG. *R. Giese* DATE *3/11/71*
 PROD. DATE

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA
D672	IN3653		

digital
EQUIPMENT
CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
FILTER NETWORK G8000
SIZE CODE CS NUMBER G8000-0-1 REV A
PRINTED CIRCUIT REV A

DEC FORM NO
DRB 102

DIST. 324, 434, 435 2

4 PINK

8

7

6

5

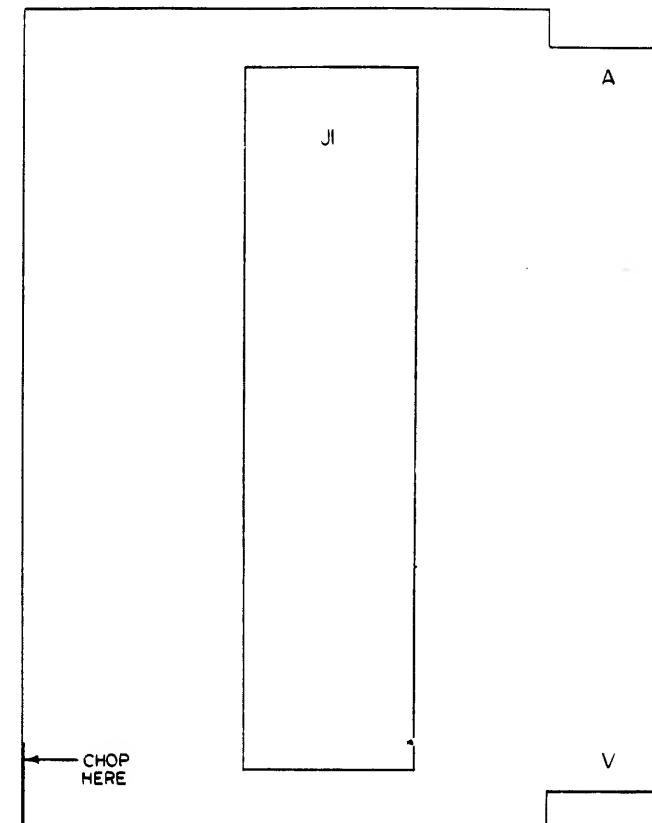
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3

2

1

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QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
PARTS LIST				
1	J1	CONN CINCH DB 255 3	1210247	5
1		ETCHED CIRCUIT BOARD	5010020	4
		MODULE ECO HISTORY	B-MH-H315-0-6	3
		ASSY/DRILLING HOLE LAYOUT	C-AH-H315-0-5	2
		X-Y COORDINATE HOLE LOCATION	K-CO-H315-0-4	1

ETCH BOARD REV	A	B
DRN. 3006731	3-9-72	FIRST USED ON
CHKD. 3-10-72		digitized
ENG. 3-10-72	3-10-72	TITLE
PROL. 3-10-72	3-10-72	MODEM TEST
PROD. 3-10-72	3-10-72	CONNECTOR
NEXT HIGHER ASSY.		
SCALE	SIZE	CODE
	D	CS
SHEET 1 OF 1	NUMBER	H315-0-1
	REV.	A
	DIST.	

DRN.	3006731	3-9-72
CHKD.	3-10-72	
ENG.	3-10-72	
PROL.	3-10-72	
PROD.	3-10-72	
NEXT HIGHER ASSY.		
SCALE	SIZE	CODE
	D	CS
SHEET 1 OF 1	NUMBER	H315-0-1
	REV.	A
	DIST.	

DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY EMPellegrin
DATE 8/29/72

ENG P. Janson
DATE 8/29/72

i CHECKED *P. Jansen*
DATE 8-30-72

PROD. *Q. 1974*
DATE 8-31-77

SECTION

ISSUED SECT.

LEGEND

D	DOCUMENT
DN	DOCUMENT CHANGE NOTICE
PA	PAPER TAPE ASCII
PB	PAPER TAPE BINARY
PM	PAPER TAPE READ-IN-MODE

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY E. PELLEGRINI	CHECKED P. JANSON	SECTION
DATE JUNE 26, 1972	DATE 8-8-72	
ENG PAUL JANSON	PROD	ISSUED SECT.
DATE JUNE 26, 1972	DATE 8-8-72	

D DOCUMENT
DN DOCUMENT CHANGE NOTICE
PA PAPER TAPE ASCII
PB PAPER TAPE BINARY
PM PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO./ PART NO.	DESCRIPTION	QUANTITY / VARIATION					
			DL11-A	DL11-B	DL11-C	DL11-D	DL11-E	
1	M7800	ASYNCHRONOUS LINE INTERFACE (EIA)	-	1	-	1	1	
2	G8000	FILTER NETWORK	0	A/R	0	A/R	A/R	
3	M7800-YA	ASYNCHRONOUS LINE INTERFACE (CURRENT LOOP)	1	0	1	0	0	
4	5408776	PRIORITY JUMPER LEVEL #4	1	1	1	1	1	
5	BC05-C-25	MODEM CABLE	0	1	0	1	1	
6	7008360	TTY CABLE	1	0	1	0	0	
7		CRYSTAL	1	1	1	1	1	
8		DL11 ENGINEERING DRAWINGS	1	1	1	1	1	
9	DEC-11-HDLAA-A-D	DL11 ASYNCHRONOUS LINE INTERFACE MANUAL	1	1	1	1	1	
10	LIBKIT-11-KL11-04	KL11 MAINDEC	1	1	0	0	0	
11	LIBKIT-11-DL11C-A-K	DL11 MAINDEC	0	0	1	1	0	
12	LIBKIT-11-DL11E-A-K	DL11 MAINDEC	0	0	0	0	1	
13	H315	MODEM TEST CONNECTOR	0	A/R	0	A/R	R SEE NOTE #3	
		NOTES: 1. G8000 IS REQUIRED ONLY IN PDP-11 SYSTEMS WHERE +15V IS NOT AVAILABLE. ONE PER DD11-A.						
		2. CRYSTAL FREQUENCY DEFINED BY CUSTOMER SPECIFIED BAUD RATE.						
		3. ONE H315 PER PDP11 SYS. OR ONE PER DL11 B D OR E LOOSE PIECE/ADD ON.						
		4. INSURE THAT TRANSPARENT VINYL TAPE HAS BEEN APPLIED TO THE TOP SURFACE OF THE CRYSTAL AND MOUNTING BRACKET.						
TITLE		ASSY. NO.	SIZE	CODE	NUMBER		REV.	ECO NO
DL11 CHECK LIST			A	A/L	DL11-0-5		D	DL11-00010
		SHEET 1 OF 1	DIST.					

DIGITAL EQUIPMENT CORPORATION						
WAYNARD, MASSACHUSETTS						
TITLE DL11 INSTALLATION PROCEDURE						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
C	CHANGE PER ECO	DL11-4	JANSON	3/73	P. Johnson	4-6-73
D	CHANGE PER ECO	DL11-5	CONDON	7/73	J. Condon	8/1/73
E	CHANGE PER ECO	DL11-7	CONDON	8/74	L. Condon	8/1/74
F	CHANGE PER ECO	DL11-8	CONDON	4-75	L. Condon	4/8/75
H	CHANGE PER ECO	DL11-10	WARRINGTON	3-76	R. Warrington	25 APR 76

ENGINEERING SPECIFICATION		CONTINUATION SHEET #
TITLE DL11 INSTALLATION PROCEDURE		
<u>DL11 INSTALLATION PROCEDURE:</u>		
Installation of the M7800 module or its variation as a DL11-A through DL11-E option consists of the following preparations:		
1. Jumper insertion/deletion for selection of operation mode (A, B, C, D, or E TO MEET CUSTOMERS REQUIREMENTS).		
2. Register address assignment.		
3. Vector address assignment.		
4. Priority assignment.		
5. Special NPIR Jumper insertion/deletion.		
6. Selection of data format (data bits, stop bits, parity).		
7. Selection of crystal for baud rate.		
8. Installation of 60000 in systems where +15v is not available.		
9. Filter capacitor selection for high baud rate current-loop.		
A. OPERATION MODE:		

ENG	APD	SIZE	CODE	NUMBER	REV																																																								
Paul E. Johnson	Johnson	A	SP	DL11-0-2	H																																																								
DEC FORM NO.	107A	SHEET	1	OF	11																																																								
DRA 107A																																																													
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TITLE DL11 INSTALLATION PROCEDURE																																																													
J7. (con't)																																																													
OUT for DL11-A, B, C and D; IN for DL11-E. Drawing DL-2.																																																													
J8. When inserted, allows error bits to be read as part of the receiver data register. OUT for DL11-A and B; IN for DL11-C,D and E. Drawing DL-2.																																																													
Summary of mode control jumpers:																																																													
<table border="1"> <thead> <tr> <th>JUMPER</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>DRAWING</th> </tr> </thead> <tbody> <tr> <td>J1</td> <td>*</td> <td>IN</td> <td>*</td> <td>IN</td> <td>IN</td> <td>DL-7</td> </tr> <tr> <td>J2</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>DL-7</td> </tr> <tr> <td>J3</td> <td>*</td> <td>OUT</td> <td>*</td> <td>IN</td> <td>IN</td> <td>DL-4</td> </tr> <tr> <td>J4</td> <td>*</td> <td>IN</td> <td>*</td> <td>IN</td> <td>OUT</td> <td>DL-4</td> </tr> <tr> <td>J5</td> <td>OUT</td> <td>OUT</td> <td>IN</td> <td>IN</td> <td>IN</td> <td>DL-4</td> </tr> <tr> <td>J6</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>DL-4</td> </tr> <tr> <td>J7</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>OUT</td> <td>DL-2</td> </tr> </tbody> </table>						JUMPER	A	B	C	D	E	DRAWING	J1	*	IN	*	IN	IN	DL-7	J2	OUT	OUT	OUT	OUT	OUT	DL-7	J3	*	OUT	*	IN	IN	DL-4	J4	*	IN	*	IN	OUT	DL-4	J5	OUT	OUT	IN	IN	IN	DL-4	J6	OUT	OUT	OUT	OUT	OUT	DL-4	J7	OUT	OUT	OUT	OUT	OUT	DL-2
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J6	OUT	OUT	OUT	OUT	OUT	DL-4																																																							
J7	OUT	OUT	OUT	OUT	OUT	DL-2																																																							

ENGINEERING SPECIFICATION		CONTINUATION SHEET				
TITLE DLL1 INSTALLATION PROCEDURE						
C. VECTOR ADDRESS ASSIGNMENT:						
<p>Jumpers V8 through V3 control the interrupt vector. A jumper inserted provides a vector bit of one. Vectors can be produced in the form XX# and XX# where XX ranges from 0# to 7#.</p> <p>For the DLL1-A and B used as a console device the vector address is 060/064. For additional units vectors are floating.</p> <p>For the DLL1-C,D, and E vector addresses are floating. Assign all C's first, then D's, then E's.</p>						
D. PRIORITY ASSIGNMENT:						
<p>Interrupt priority is established by inserting a "priority plug" in the socket at IC location E19. For DLL1-A B,C,D and E use level 4, for the standard assignment or level 5-7 as specified by the customer or the documentation of an option which uses the DLL1.</p>						
SUMMARY OF REGISTER, VECTOR AND PRIORITY ASSIGNMENTS:						
		ADDRESS	VECTOR	PRIORITY		
DLL1-A, B CONSOLE		777560 777562 777564 777566	60/64	BR4		
DLL1-A,B ADDITIONAL UNITS		776XXX0 776XXX2 776XXX4 776XXX6	FLOATING	BR4		
Where XX= 50 for line #1 and XX= 67 for line #16						
		ADDRESS	VECTOR	PRIORITY		
DLL1-C, D,E		77XXX0 77XXX2 77XXX4 77XXX6	Floating	4		
Where XXX= 561 for line #1 and XXX= 617 for line #31						
		SIZE	CODE	NUMBER	REV	
		A	SP	DLL1-0-2	H	
		M7 ~ SHEET 4 OF 11				
		DECFORM NO DEC 16-1811-1022-N370				
		DRA 108				

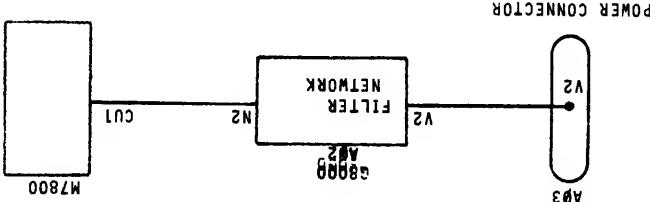
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TITLE DL11 INSTALLATION PROCEDURE																																																										
<p>E. SPECIAL NMR JUMPER: Jumper N1, shown on drawing DL-6, controls the response of the interrupt circuit to an NMR request. The jumper should normally be IN, except for 11/20 and 11/15 systems without the KHL1 option.</p> <p>F. SELECTION OF DATA FORMAT:</p> <ol style="list-style-type: none"> 1. Data Bits Split lug pairs NB2 and NB1 control the number of data bits in the serial character as follows: <table border="1"> <tr> <td><u>NB2</u></td> <td><u>NB1</u></td> <td><u># OF DATA BITS</u></td> </tr> <tr> <td>OUT</td> <td>OUT</td> <td>8</td> </tr> <tr> <td>OUT</td> <td>IN</td> <td>7</td> </tr> <tr> <td>IN</td> <td>OUT</td> <td>6</td> </tr> <tr> <td>IN</td> <td>IN</td> <td>5</td> </tr> </table> 2. Parity Parity is controlled by split lug pairs NP and EPS as follows: <table border="1"> <tr> <td><u>NP</u></td> <td><u>EPS</u></td> <td><u>PARTY</u></td> </tr> <tr> <td>OUT</td> <td>OUT</td> <td>OFF</td> </tr> <tr> <td>OUT</td> <td>IN</td> <td>OFF</td> </tr> <tr> <td>IN</td> <td>OUT</td> <td>EVEN</td> </tr> <tr> <td>IN</td> <td>IN</td> <td>ODD</td> </tr> </table> 3. Stop Bits Split lug pair 2SB and jumpers J9, J10 and J11 control the number of stop bits in the serial character as follows: <table border="1"> <tr> <td><u>2SB</u></td> <td><u>J9</u></td> <td><u>J10</u></td> <td><u>J11</u></td> <td><u># OF STOP BITS</u></td> </tr> <tr> <td>OUT</td> <td>OUT</td> <td>IN</td> <td>OUT</td> <td>2</td> </tr> <tr> <td>IN</td> <td>OUT</td> <td>IN</td> <td>OUT</td> <td>1.5 for J1, J11</td> </tr> <tr> <td>IN</td> <td>OUT</td> <td>IN</td> <td>OUT</td> <td>1.5 for J1, J11 and SMC UARTS</td> </tr> <tr> <td>IN</td> <td>IN</td> <td>OUT</td> <td>OUT</td> <td>1.5 for WD UARTS</td> </tr> </table> <p>G. CRYSTAL SELECTION:</p> <p>The clocking scheme of the DL11 consists of a single crystal oscillator feeding a divider network, with two 10-position switches tapping various points to feed into the UART's</p>				<u>NB2</u>	<u>NB1</u>	<u># OF DATA BITS</u>	OUT	OUT	8	OUT	IN	7	IN	OUT	6	IN	IN	5	<u>NP</u>	<u>EPS</u>	<u>PARTY</u>	OUT	OUT	OFF	OUT	IN	OFF	IN	OUT	EVEN	IN	IN	ODD	<u>2SB</u>	<u>J9</u>	<u>J10</u>	<u>J11</u>	<u># OF STOP BITS</u>	OUT	OUT	IN	OUT	2	IN	OUT	IN	OUT	1.5 for J1, J11	IN	OUT	IN	OUT	1.5 for J1, J11 and SMC UARTS	IN	IN	OUT	OUT	1.5 for WD UARTS
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<p>E. SPECIAL NMR JUMPER: 6. Con't transmitter and receiver sections. Thus, for a given crystal frequency, 8 baud rates are independently selectable for transmit and receive. The two addition switch positions select external clocks.</p> <p>F. SELECTION OF DATA FORMAT:</p> <ol style="list-style-type: none"> 1. Data Bits To determine a crystal frequency for a non-standard baud rate, pick the position of the closest baud rate in the 1.152MHz column, and then multiply the non-standard baud rate by the factor for that position. For example, if the customer specifies 1050 baud, this is closest to 1200 baud, position 6. $1050 \times 960 = 10080000 = 1.008MHz$. 2. Parity The crystal frequency should not fall outside the range of the standard crystals. Although the above table includes only the standard DL11 crystals, other values may be specified by the customer or by other documentation of an option which uses the DL11. DEC part number for the standard crystals are as follows: <table border="1"> <tr> <td>NPB</td> <td>EPS</td> <td>PARTY</td> <td>844.8 KHZ</td> <td>18-10245-1*</td> </tr> <tr> <td>OUT</td> <td>OUT</td> <td>OFF</td> <td>1.03256 MHz</td> <td>18-05501-6</td> </tr> <tr> <td>OUT</td> <td>IN</td> <td>OFF</td> <td>1.152 MHz</td> <td>18-05501-5</td> </tr> <tr> <td>IN</td> <td>OUT</td> <td>EVEN</td> <td>1.200 MHz</td> <td>18-05501-7</td> </tr> <tr> <td>IN</td> <td>IN</td> <td>ODD</td> <td>4.608 MHz</td> <td></td> </tr> </table> 3. Stop Bits *Use A or C cut crystals only. Do not use crystals marked NE-60. When ordering a special crystal, refer to purchase specification 18-05501 for crystal specification. <p>Insure that transparent vinyl tape (9008269) is applied to the top surfaces of the crystal and mounting brackets to insulate from adjacent modules.</p>				NPB	EPS	PARTY	844.8 KHZ	18-10245-1*	OUT	OUT	OFF	1.03256 MHz	18-05501-6	OUT	IN	OFF	1.152 MHz	18-05501-5	IN	OUT	EVEN	1.200 MHz	18-05501-7	IN	IN	ODD	4.608 MHz												
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ENGINEERING SPECIFICATION		CONTINUATION SHEET																																					
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<p>H. 68000 INSTALLATION:</p> <p>For DL11-B, D, and E a positive voltage is required between 9 and 15 volts to operate the EIA drivers. For PDP-11/20 and PDP-11/15 systems with the H720 power supply, a 68000 module must be installed to provide this voltage. Using a +8V signal to a positive DC voltage.</p> <ol style="list-style-type: none"> 1. Install 68000 into slot A#2 of DL11-A. 2. Wire A#3V2 to A#8V2. 3. Wire A#2V2 to CX01 where XX is the slot location of the H7800. <p>Refer to diagram 1.</p>																																							
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<p>I. FILTER CAPACITOR SELECTION:</p> <p>For DL11-B, D, and E in systems with +15V available, using a DL11-A, there is a special situation of using a DL11-A to mount a DL11-B, D, or E in systems with +15V available. These systems have +15V available and it appears at pin A#3V2 of the DL11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no C8000 is necessary, and +15V can be wired directly from A#3V2 to CX01, where XX is the slot number of the DL11. NOTE: this does not apply to DL11-A or C or DL11-B.</p> <p>J. DL11-B, D, E in Systems with +15V available: There is a special situation of using a DL11-A to mount a DL11-B, D, or E in systems with +15V available. These systems have +15V available and it appears at pin A#3V2 of the DL11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no C8000 is necessary, and +15V can be wired directly from A#3V2 to CX01, where XX is the slot number of the DL11. NOTE: this does not apply to DL11-A or C or DL11-B.</p> <p>K. When using the DL11-F, D, E in an 11/05 processor: Pin CX01 has +15V available on it so no G8000 or no jumpers are required.</p>																																							
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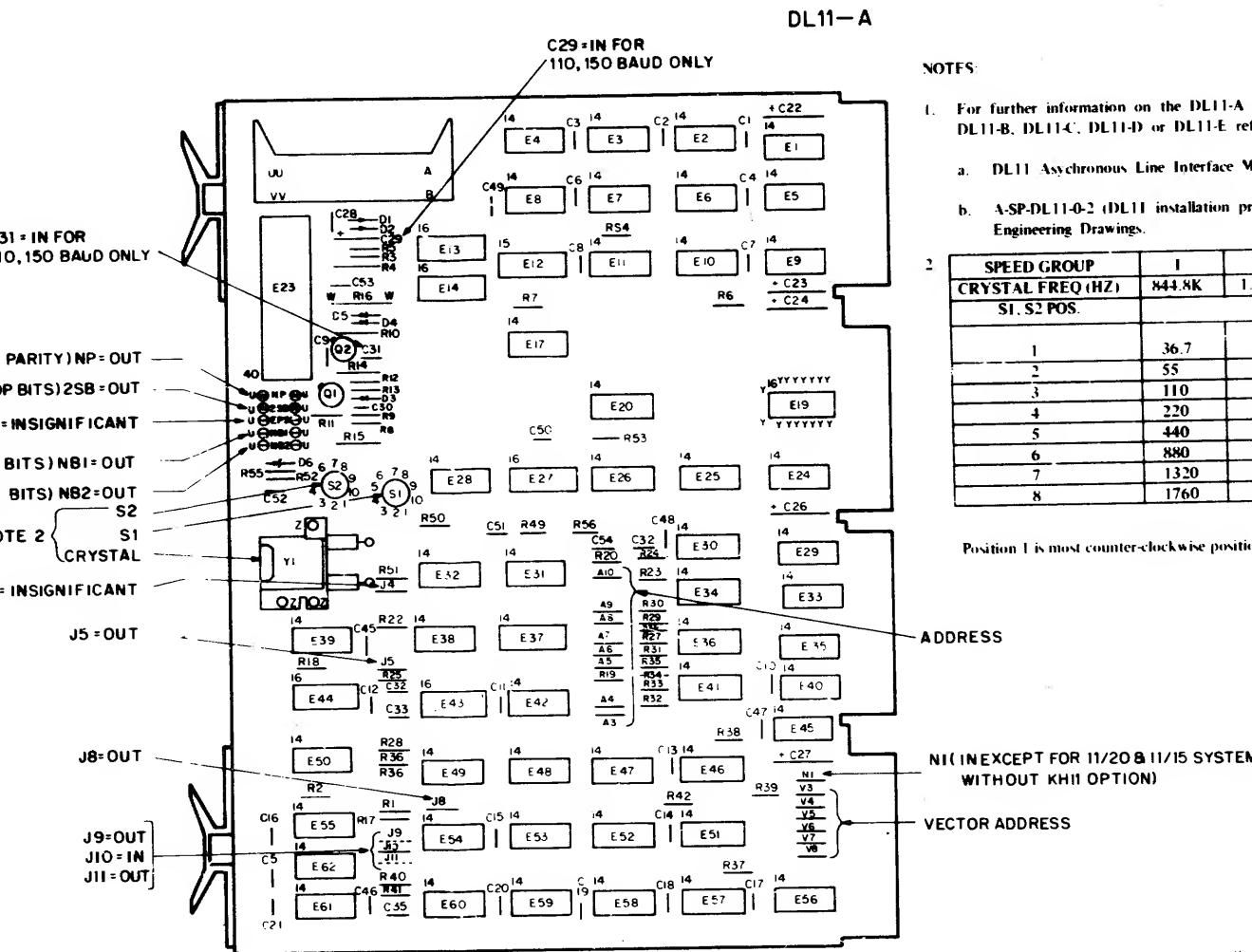
DIAGRAM 1. 68000 INSTALLATION



ENGINEERING SPECIFICATION

TITLE DL11 INSTALLATION PROCEDURE

CONTINUATION SHEET



NOTES:

- For further information on the DL11-A configuration or the installation of DL11-B, DL11-C, DL11-D or DL11-E refer to
 - DL11 Asynchronous Line Interface Manual
 - ASP-DL11-0-2 (DL11 installation procedure) in the DL11 Engineering Drawings.

SPEED GROUP	1	2	3	4
CRYSTAL FREQ (HZ)	44.8K	1.03296M	1.152M	4.608M
SI, S2 POS.	BAUD RATE			
1	36.7	44.8	50	200
2	55	67.3	75	300
3	110	134.5	150	600
4	220	269	300	1200
5	440	538	600	2400
6	880	1076	1200	4800
7	1320	1614	1800	7200
8	1760	2152	2400	9600

Position 1 is most counter-clockwise position.

ADDRESS

NI (IN EXCEPT FOR 11/208 & 11/15 SYSTEMS WITHOUT KH11 OPTION)

VECTOR ADDRESS

II-2454

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

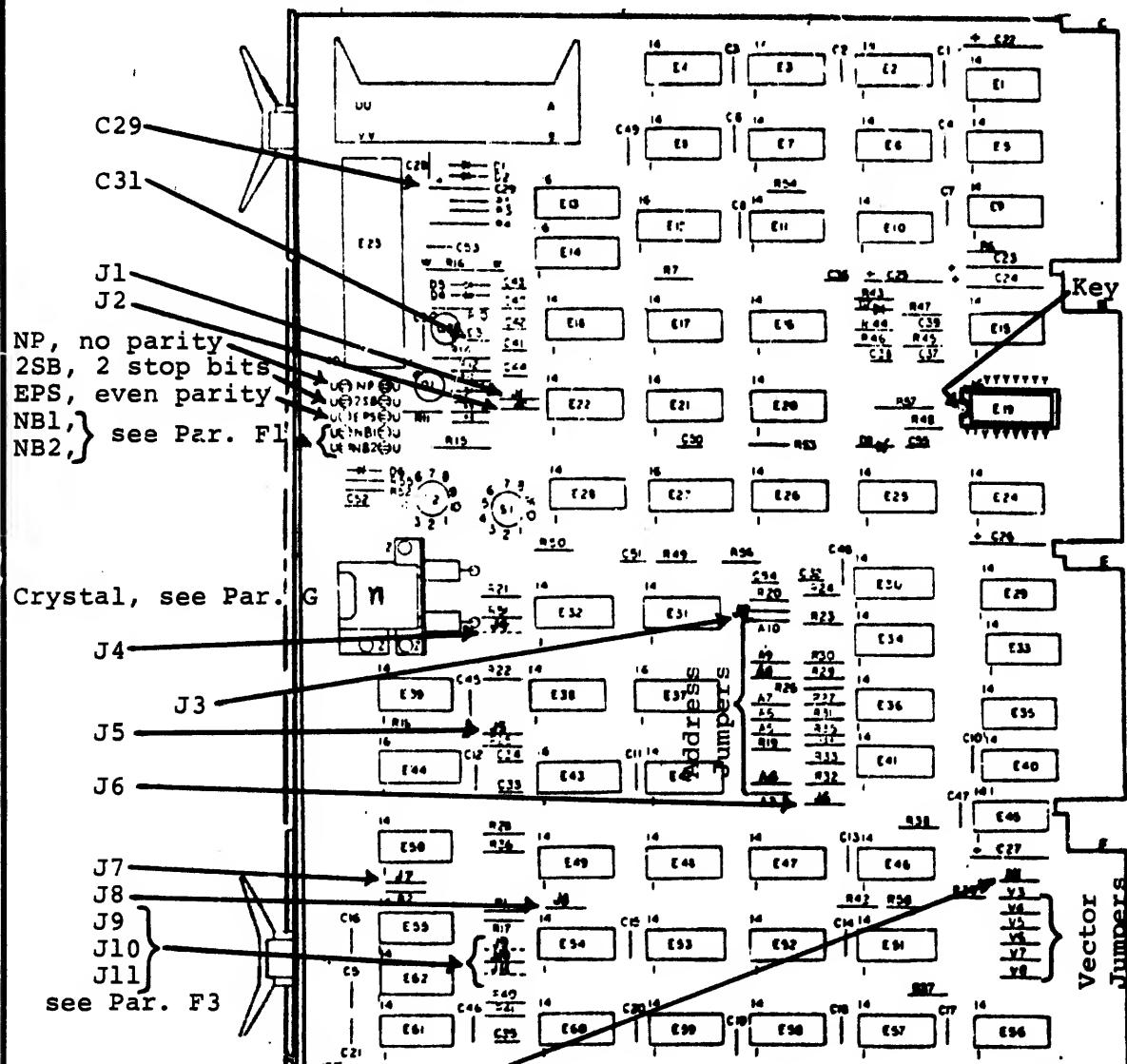
SHEET 9 OF 11

REV H

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

DL11-B/D/E
(M7800)NOTE: For jumper configuration of DL11-B/D/E refer to
page 3&5.C29 and C31 are required for DL11-A and C at 150 BAUD or less,
DL11-B,D&E don't care.

SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

SHEET 10 OF 11

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DL11 INSTALLATION PROCEDURE

Figure 1
Identifying Marks for UART (19 10459) VendorsSTANDARD
MICROSYSTEMSGENERAL
INSTRUMENTTEXAS
INSTRUMENTSADVANCED
MICRO DEVICES

WESTERN DIGITAL



SIZE	CODE	NUMBER	REV
A	SP	DL11-0-2	H

SHEET 11 OF 11